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SHORT AND LONG SYLLABLE NUCLEI

(WITH EXAMPLES FROM ALGONQUIAN, SIOUAN, AND INDO-EUROPEAN)*

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It is possible to be an adherent of the God's-truth doctrine in linguistics,[1] and none the less to be convinced that the search for some one 'correct' set of procedures for phonemicization, applicable to any and every language, is chimerical. This is the current conviction of the present writer; a phonemicization codifies and reports phonological facts (which exist whether so codified and reported or not), but this can be done in many equally valid ways, just as one can take a picture from any number of different angles.

It is none the less valuable to be able to use uniform procedures, overtly described, for various languages, if only because it renders the comparison of diverse phonological systems easier. It is not necessary, in order for some set of procedures to serve us in this way, for it to be applicable to every language, or, indeed, to whole phonological systems; rules of thumb for the manipulation of the material in some definable subsystems of some phonological systems should be accorded their useful function. The only danger with rules of thumb is that they will be applied where they do not belong; we cannot always know in advance, and can obviate the danger only by an attitude of sufficient flexibility and humility.

Herein is described and illustrated one set of rules of thumb.

In a great many languages, a sufficient amount of work reveals that there are such things as syllable nuclei, and that these nuclei fall quite sharply into two classes, short and long. The shorts are monophthongal, or nearly so; the longs may be monophthongal or diphthongal. Recognition of such a situation implies some variety of phonological IC-analysis; otherwise we would not know, for example, whether to interpret the English word /beyt/ *bait* as containing initial /b/, nucleus /ey/, and final /t/, or initial /b/, nucleus /e/, and final cluster /yt/. This is a poor illustration, because the notation in which it has been presented implies that the ultimate constituents of the form are /b/, /e/, /y/, and /t/; the aim of our rules of thumb is to determine (in one possible way) the ultimate constituents when one has, as a starting-place, the whole stock of syllable nuclei regarded as units. Phonemic analysis proceeds in fact by trial and error, with constant phonetic rechecking (save when circumstances forbid it) with informants.[2] In order to apply the rules of thumb described here, it may be that a fairly conclusive phonemic portrayal must be torn apart, fairly late in the whole sequence of work with a language. All of this, however, need obviously give us no pause.

Given the stock of syllable nuclei, the

* After this paper was submitted investigation revealed that the facts reported for Winnebago—though not the phonemic conclusions—were in error. Unfortunately it was too late for an economical withdrawal or postponement of the paper. The validity of the method, I believe, is not impaired; the reader can replace 'Winnebago' throughout by 'pseudo-Winnebago', a Siouan-like invented language.

[1] Fred W. Householder, Jr., IJAL 18.260 ff.

[2] C. F. Voegelin, IJAL 15.75 ff. (esp. his point 1).

procedures are as follows; we present them stepwise, and then discuss and illustrate:

Step 1. List the short nuclei and call them phonemes.

Step 2. List each long nucleus alongside the short nucleus which is most similar phonetically to the initial part of the long nucleus.

Step 3. Decompose each long nucleus into two parts: the short nucleus alongside which it has been listed, and a portion which subsumes everything wherein the long differs from the short.

Step 4. Examine the distribution of the second portions thus established, relative to each other, relative to the short nuclei, and relative to any other phonic material in the language; on the basis of these distributions, and of phonetic similarity, establish phonemes which include these second portions as allophones (whether or not they include any other allophones).

By these procedures, each long nucleus has been phonemicized as a cluster of two phonemes; the first member of each cluster is the same phoneme as one which occurs alone as a whole short nucleus, and the second member may be variously allied.

The second portions isolated by step 3 will be of a number of different types, to which we can give names:

(1) Lengtheners. The simplest lengthener is that extracted from a monophthongal long vowel which differs from the paired short nucleus only as to length, not also in some other way. But we must also recognize raising lengtheners, lowering lengtheners, and perhaps others; e.g., [ɪ] and [iˑ] can be related by saying that the latter consists of the former plus a raising lengthener.

(2) Direction-glides. A long nucleus contains a direction-glide if, after the initial tongue and lip position, there is motion of the tongue (and/or of the lips) in a relevant direction, but not for any clearly defined distance. Thus in the diphthongal nuclei of English /ey/, /ay/, /oy/ (bay, by, boy) the glide is necessarily towards high-front-unrounded position, but how far in that direction the glide is continued varies non-distinctively; /ey/ probably has the highest frontest average endpoint, /ay/ the next, and /oy/ the lowest and least front.

(3) Distance-glides. In these the region reached within the nucleus is distinctive; e.g., where English has, beginning with the /o/ position, only a single long nucleus with tongue-motion towards the high-front position, Winnebago has two, for one of which the tongue stops its motion in the Winnebago /e/ region, for the other of which it continues into the Winnebago /i/ region.

Let us now consider some examples, filling in more procedural assumptions en route.

In Fox there are four short nuclei and four long ones, which are clearly to be paired off as follows:

[ɪ]	[ɛ]	[ʌ]	[ʊ]
[iˑ]	[æˑ]	[aˑ]	[oˑ].

The long nuclei are all monophthongal, and thus can be related to the shorts by means of lengtheners. In [iˑ] we may posit [ɪ] and a raising lengthener; in the other three longs, the corresponding shorts and a lowering lengthener. We may posit that any two lengtheners are phonetically similar; since in the present case the raising and lowering lengtheners are also in complementary distribution, we may assign them to a single phoneme of length, which then has as its sole positions of occurrence the positions immediately 'after' a vowel phoneme. But we may also posit that any lengthener is phonetically similar to the nucleus which it is lengthening. On this basis, we could assign the raising lengthener to the high-front vowel phoneme, and the lowering lengthener in each case to the same phoneme as that which immediately precedes; then the four long nuclei would be geminate clusters.

But we may pair the shorts and longs off differently. We may analyze [æˑ] as containing [ʌ] and a fronting lengthener, thus recognizing three different lengtheners, two of which occur with a single preceding vowel

phoneme, and one vowel phoneme ([ɛ]) which does not occur with any lengthener. The procedures being described here do not in themselves afford any basis for rejecting this alternative in favor of the first (with its two alternative ensuing phonemicizations). Morphophonemic considerations clearly lend strength to the first interpretation, for there are cases of alternation between longs and shorts, and in these cases [æ·] alternates with [ɛ], not with [ʌ]. This is a perfectly legitimate basis for the decision, since we are not here engaged purely in a description of the phono ogical facts, and the choice of a way which makes grammatical statement easier is good sense. Even apart from morphophonemic considerations, we might find reason to prefer the first alternative because the second sets up one more entity than we need deal with in portraying the system, thus achieving an inelegantly skew picture of an essentially symmetrical system.

However, for the two lemmas under the first alternative—a length phoneme versus vowel clusters—the writer cannot at present see any reasonable basis for a choice.

In Cree the situation is rather different. There are only three short nuclei: [ɪ] [ʌ] [ʊ]. And, instead of four, there are seven longs: [ɪy] [i·] [e·] [ʌy] [a·] [o·] [ow]. We have anticipated our conclusions in part: there are prevocalic /y/'s and /w/'s in the system, and it is pretty obvious that three of the long nuclei should be interpreted, as indicated, as containing direction-glides phonemically assignable to /y/ and /w/. This means, of course, that /y/ and /w/ are not apt to be available as the phonemes which include any of the other lengtheners or glides which we extract.

The long [i·] seems clearly to demand the high-front vowel [ɪ] and a raising lengthener; as in Fox, a raising lengthener occurs only here. [a·] and [o·] can be interpreted as [ʌ] and [ʊ] with a lowering lengthener. There are then two realistic interpretations possible for [e·]:[ʌ] plus a fronting lengthener (which otherwise does not have to be recognized), or [ɪ] plus a lowering lengthener (which has already been recognized in [a·] and [o·]). For the parenthetically indicated reasons, we may prefer the second alternative; morphophonemics supports such a preference, since both [i·] and [e·] alternate with [ɪ].

However, this seems to end the possible manipulation—so long as we retain any penchant, as the writer does, for hugging the phonetic ground closely. With the vowel [ɪ] we have one glide and two lengtheners, all in contrast; no two of these three can be phonemically identified, /y/ cannot be identified with /w/, and there seems no justification in phonetic realism for identifying either of the two lengtheners with /w/. We could push things around a bit, but the system is inherently skew, and the skewness seems to be represented as fairly and accurately by establishing each lengthener as a phoneme as by any other means.

Perhaps this conclusion for Cree lends support to one alternative for Fox rather than the other. Of course, if we are just examining Fox, or are contrasting Fox phonology with the phonological systems of all sorts of languages, then there is no reason to do things a particular way in Fox because some other language requires similar handling. But Fox and Cree are related, and one of the contexts in which either will be discussed will be the comparative (not merely contrastive) context. If we interpret the longs of Fox as short vowel plus length phoneme, comparative work in Algonquian is rendered simpler—though only, indeed, very slightly so—since in both Fox and Cree we have vowel phonemes and lengtheners (one in Fox, two in Cree). The justification for using such a basis is exactly the same as for using morphophonemic considerations: we are not handling pure phonology, but are codifying phonological systems for one or another purpose.

Menomini presents a considerably more complicated picture. There are six short

vowels: [i] [ɪ] [ɛ] [ʌ] [ʊ] [u]; and eight long nuclei: [i·] [e·] [æ·] [a·] [o·] [u·] [iə] [uə]. The monophthongal longs can easily be paired off with the six shorts: [i·] and [u·] contain scalar (non-raising, non-lowering, etc.) lengtheners; the other four all contain a lowering lengthener. The last two longs contain a centering direction-glide. Some of these nuclei—long as well as short—occur before a (word-final or prevocalic) /w/ or /y/, so that complementation with /w/ or/y/ is not to be sought. The lowering lengthener is in complementary distribution with, and is phonetically similar to, both the scalar lengthener and the centering glide; the latter two, however, contrast. Two possible phonemicizations, therefore, are to set up a single lengthening phoneme and a single centering glide, or a scalar lengthener and a phoneme which is a centering glide after the two high vowels, otherwise a lowering lengthener. A third possible phonemicization is to interpret the monophthongal longs as geminates (remembering that a lengthener is always phonetically similar to the vowel it accompanies), and the two diphthongal longs as dissimilar clusters, /ia/ and /ua/.

The morphophonemics of Menomini does not offer much help in choosing between these. Shorts and longs alternate, mainly though not exclusively in terms of the pairings indicated above. The two diphthongs participate in this alternation; the corresponding 'shorts' are postconsonantal/ya/ and /wa/. This would render highly useful an interpretation with a single length phoneme, with the added specification that /ya·/ and /wa·/ after consonants are [iə] and [uə]. This is not possible, however, because initially [wa·] and [uə] are in contrast; the former is necessarily phonemically /wa·/ (or however we treat the long [a·]), and the latter cannot be. Since the morphophonemically most useful alternative phonemicization is barred, we are left with alternatives between which, at the moment, the writer cannot choose.

Before giving more examples we may pause for a moment to discuss some of the matters which have already come up. The assumption made in the above about 'phonetic similarity' is one that we always make, but not always overtly. 'Phonetically similar to' is a reflexive and symmetrical, but nontransitive, relation; that is, for all A, A is similar to itself; for all A and B, if A is phonetically similar to B, then B is phonetically similar to A; but if A is phonetically similar to B and B to C it does not follow that A is phonetically similar to C. Two items are phonetically similar if they have something in common. All lengtheners have in common that they lengthen, and that they result in monophthongal rather than diphthongal longs. A lengthener—either scalar or raising—with a high front vowel has in common with high-front direction glide an approximate reference end-point of tongue position, whether it is an endpoint reached during the articulation of the long nucleus or only one aimed towards. A lowering lengthener with a low vowel and a raising lengthener with a high front vowel have the first-mentioned common feature; the latter and a high-front direction glide with a low vowel have the second mentioned common feature; but the lowering lengthener with the low vowel and the high-front direction glide with the same low vowel have neither feature in common; if they are phonetically similar, it is in some vaguer way.

This is related to the ambiguities of conclusion which we have already encountered. Perhaps we can say that lack of adequate phonetic similarity sets a bar on certain conclusions possible under a purely hocus-pocus approach, but that presence of adequate phonetic similarity performs no comparable positively decisive role; what we have is a setting of limits by this factor, rather than always a clear indication of appropriate solution.

A problem that has not come up yet in our examples is that of deciding phonetically whether a particular long nucleus contains,

say, a raising lengthener or a high-front glide. Where this is hard to decide phonetically it often happens that the phonemic answer, contrariwise, is easier rather than more difficult. Consider, for example, one variety of standard German. The short nuclei (in stressed position) are seven in number:[3] [ɪ] [ɛ] [ʏ] [ɔ̈] [ʊ] [ɔ] [a]. There are three clearly diphthongal longs: [ay] [oy] [aw]; two clearly monophthongal longs: [ɛ·] [a·]; and six longs which we will transcribe as monophthongal, though this is where there is reasonable doubt: [i·] [e·] [ü·] [ö·] [u·] [o·]. The [i·], for example, sometimes sounds as though it started a bit lower and ended with the tongue in a higher position. Three second elements suffice to handle all of these longs. The first, which we will write as /y/, occurs in two of the clearly diphthongal longs, which we can now write as /ay/ and /oy/; here its allophone is a high-front direction glide. It occurs also in [i·], [e·], [ü·] and [ö·], where its allophone is either a raising lengthener or a high-front direction glide, or perhaps indifferently either of these. The second, which we will write as /w/, occurs in the other clearly diphthongal long, now interpreted as /aw/, and in [o·] and [u·]; its allophones are similarly describable. The third, which we will write as /h/, occurs in the two clearly monophthongal longs, which we can now transcribe as /eh/ and /ah/; its only allophone is that of a lowering lengthener. Other solutions are possible, but none allow fewer than three second elements for longs.

The postvocalic /y/ set up by this scheme is in complementary distribution with, and phonetically similar to, a postvocalic /y/, and can be called the same phoneme. The postvocalic /h/, similarly, can be assigned to the same phoneme as the prevocalic /h/: the prevocalic allophone is voiceless (and an obstruent), while the postvocalic allophone is voiced (and a sonorant), but otherwise the two are much alike. But the postvocalic /w/ established above is isolated, as were the two lengtheners of Cree or the one of Fox—it occurs only in this position. (The orthographic 'w' of German is of course a labiodental spirant, which might still allow phonemic identification with the postvocalic /w/ we have established, but complementary distribution, if formerly it was to be found, has been lost via relatively recent loan words.)

One implication of the example just given is that some of Pike's objections to the biphonemic interpretation of the English syllabics of *see*, *through*, *say*, *go*, can be bypassed. There are a great many speakers for whom the long high syllabics of English are always, or else in many positions, quite monophthongal; there are fewer, but still some, for whom the syllabics of *say*, *go* are monophthongal (e.g., in northern Wisconsin and Michigan). It is foolish to force one's ears to hear a diphthong where there often is none, in order that one may hold to a favored phonemic codification. Of course it is also dishonest, but such cases of honest dishonesty—well-intentioned self-deception —are hard to avoid, and that is not the point here. The point is that perfectly monophthongal vowels in *see*, *through*, *say*, *go*, can with perfect ease be treated phonemically so as to establish phonemic /iy/, /uw/, /ey/, /ow/.

Our examples so far have involved no distance-glides. We find them in Winnebago. Here there are both oral and nasal syllabics; we shall deal only with the former, with an assurance to the reader that the limitation is irrelevant for our present purposes. The short (oral) syllabics are roughly [i] [e] [a] [o] [u]. There are five monophthongal longs, which pair quite well with the five shorts, though there may be minor qualitative differences: [i·] [e·] [a·] [o·] [u·]. And there are twenty diphthongal long syllabics; we transcribe them here simply with two vowel

[3] The phonetic symbols here must be interpreted properly; it seems hardly necessary to complicate matters with shift signs. The longs [ɛ·] and [a·] are both a bit lower than the shorts [ɛ] and [a].

letters, and the reader is to imagine a mark of some kind under the second, in each case, indicating that it is less prominent than the one which precedes it:

	[ie]	[ia]	[io]	[iu]
[ei]		[ea]	[eo]	[eu]
[ai]	[ae]		[ao]	[au]
[oi]	[oe]	[oa]		[ou]
[ui]	[ue]	[ua]	[uo].[4]	

The obvious solution in this case is that there are five (oral) vowel phonemes, and that a syllabic consists of any one of them or of any sequence of two; the monophthongal longs are then geminates. This interpretation allows of no ambiguity: an utterance begins with a consonant; a vowel preceded by a consonant may be followed by a consonant, a second vowel, or by nothing (utterance-final); a vowel preceded by a vowel is followed either by a consonant or by nothing, never by a third vowel phoneme.

One feature shared by all our examples is that there have been in each case at least as many longs as shorts. There is no reason to believe that such must always be the case, though at the moment the writer has no contrary example. We can well enough imagine one; let us say, a system with three shorts [i a u], and only two longs, [ay aw]. The features involved in these five nuclei are perfectly clear; other facts about the language would be needed in order to decide whether /i/ and [y], or /u/ and [w], can be phonemically identified. There is no use in inventing additional 'facts' in order to reach some purely hypothetical conclusion.

[4] These vary greatly in frequency, and a few seem not to be attested at all. It is difficult to tell whether the non-occurrent longs are absent simply through lexical accident, as it were—the non-existence of morphemes of the proper shapes, like the non-occurrence of a perfectly pronounceable monosyllable *gleet* in English—or for phonologically systematic reasons. The most likely systematic absences are those with [u] as second member (except [u·]), and [ae] and [ao]. If we lean over backwards in this connection, the final analysis presented above still holds. Data from Amelia Susman, The Accentual System of Winnebago, New York (1943).

For a great many phonological systems the rules of thumb developed here would be of no particular help. Even the phonemic solution proposed above for Winnebago might well be reached by some other route. Yet our rules of thumb have an appropriateness for Winnebago: single vowels, and what prove to be sequences of two vowels, are the only types of material (except for no material at all) that can occur between successive consonants or between a consonant and the end of an utterance. The sort of elementary IC approach which is normally taken in the field, where after sample materials have been gathered lists are made of consonantism between beginning of utterance and first vowel, between successive tentative vowels, and the like, will in the case of Winnebago eventually sort out precisely the 'syllable nuclei' which we have discussed.

And if one were to insist on applying our rules of thumb even in cases where the obvious conclusion could more quickly be reached without them, they have the merit of being, as it were, self-eliminating; that is, they will not produce an invalid conclusion, even if in some cases they leave some decisions open. (This claim holds, of course, only if the raw materials to which the rules of thumb are applied have been accurately assembled.) To illustrate this, let us examine Russian. Looking for short and long 'nuclei', one would eventually list the five vowel phonemes /i e a o u/ and five diphthongs [iy ey ay oy uy]. There is a prevocalic /y/, and the phonemic conclusion is immediately and obviously that all five vowels occur before /y/. The only error involved in this procedure turns up, not in the conclusion—which is that established and accepted by various analysts working with Russian by other techniques—but in the assumption that /iy ey ay oy uy/ are in some structural sense 'nuclei'. The privileges of occurrence of /iy ey ay oy uy/ are not, by and large, like those of the simple vowels /i e a o u/; rather, they resemble those of any other sequence of vowel plus consonant,

say /it/ or /is/. The IC cuts, that is, were made in the wrong places. However, further examination would reveal that fact, and it remains true that the methodological route through our rules of thumb, based on a faulty tentative IC assumption, has not impaired the ultimate conclusions.

The same would be true, it seems to the writer, were one examining a language, such as Spanish, in which the great difficulty lies in deciding just how long a stretch of material should be included as 'syllable nucleus'. Five vowel qualities, roughly [i e a o u], occur in Spanish in various sequences (some of them of more than two members) and with varying degrees of prominence. The greatest degree of prominence requires handling with a stress phoneme (e.g., canto, cantó). All the remaining degrees are predictable in terms of the specific sequences of vowel qualities and the location of the stress. The full panoply of statements describing this is quite complicated; by way of example (the simplest statement of the set), an unstressed /i/ or /u/ adjacent to a lower vowel is less prominent than that lower vowel (piedra, cual, rey [r̃éi], auto). Yet any reasonable set of IC cuts, giving short and long nuclei that could be subjected to our rules of thumb, would in due time reach the kind of conclusion just stated in part.

We may close with a brief terminological suggestion. In a language which does genuinely have (when analysis has been completed) both short and long syllable nuclei, phonemes may occur at peak of syllabic sonority (the /e/ of /beyt/), as second element of a long syllable (the /y/ of /beyt/), or as nonsyllabic (the /b/ or /t/ of /beyt/). The segmental phonemes of a language fall into sets depending on whether they occur in only one of these positions or in more than one, and, in the latter case, depending on which ones. In Cree, accepting the interpretation which sets up a raising lengthener and a lowering lengthener as phonemes not identifiable with anything else in the system, we thus have VOWELS (phonemes which occur only at peak of syllable sonority), CONSONANTS (which occur only as nonsyllabics), SEMICONSONANTS (/y/, /w/, which occur as nonsyllabics and as second elements), and GLIDES (the two lengtheners, which occur only as second elements). In German we found vowels, consonants, two semiconsonants (/y/, /h/), and one glide. In English there are vowels, consonants, and three semiconsonants (/y/, /h/, /w/). Phonemes which occur either at peaks of sonority or as second elements in long nuclei we can call SEMIVOWELS; thus in Winnebago /i ɛ a o u/ are all semivowels; in many languages /i u/ are semivowels but lower vocoids are vowels. There remains the possibility of phonemes which occur in all three positions (perhaps /i/ and /u/ in Wishram)[5] but for this the writer can think of no apt label. Logically there is still one more possibility: a phoneme which occurs only at peak of sonority or as nonsyllabic; in a language with genuine shorts and longs this situation does not seem apt to occur. Tabularly:

	Peak	Second element	Non-syllabic
Vowel	×	—	—
Glide	—	×	—
Consonant	—	—	×
Semivowel	×	×	—
(?	×	—	×)
Semiconsonant	—	×	×
?	×	×	×

For languages where there is no genuine contrast between short and long syllabics (e.g., Russian), the terms can be assigned as follows (following tradition more closely than was possible above):

	Syllabic	Nonsyllabic
Vowel	×	—
Consonant	—	×
Semivowel	×	×

[5] Or /i/, /u/, /ü/, /r/ in Mandarin; e.g., /i/ is at the peak of syllabicity in /bi³/ *pen*, is a second element in /ai³/ *short*, and is nonsyllabic in /biau³/ *watch*.

CHEROKEE VERB MORPHOLOGY I

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0.1. Acknowledgments
0.2. Introduction
1. Phonology
1.3. Voiceless H
2. Prepronominal prefixes
2.1. Morpheme list
2.2. Morpheme alternation
2.3. Morphophonemic notation
2.4. Morpheme order

0.1. The data for this paper were collected while the writer resided on the Qualla Reservation, Cherokee, North Carolina, July 1, 1951 to February 9, 1952. I wish to express my appreciation to my many Cherokee friends who assisted in the arrangements necessary for carrying on this work. I am indebted to Jess Youngdeer and especially to Annie Oocumma, my informants, whose friendship and patience made the gathering of the data a most enjoyable task.

The undertaking of a Cherokee analysis was suggested to me by Zellig S. Harris, who generously put at my disposal his own materials (see below). These materials were studied in order to gain some familiarity with Cherokee morphological structure. All forms occurring in the present paper, however, are taken from the writer's own corpus (see below).

I am deeply grateful to Professor Harris who gave unsparingly of his time working over many difficult problems. His friendship, interest, and rigorous methods of handling linguistic data have been and will continue to be an inspiration. I have also been influenced by Floyd Lounsbury's Oneida grammar in MS. in the Yale Library.

I wish also to thank the Phillips Fund of the American Philosophical Society Library for providing funds necessary for the gathering of a large amount of Cherokee data, a part of which is used in this study.

The following Cherokee data have been added to the Franz Boas Collection of materials for American Linguistics in the Library of the American Philosophical Society at Philadelphia since the publication of the Index (Supplement to Language 21.3 (1945)).

Zellig S. Harris, Cherokee materials (497.3, B63c, I.2.4.): Three boxes of 4 x 6 cards (Alphabetical morpheme arrangement. Two boxes of 3 x 5 slips. Alphabetical morpheme arrangement); Grammatical word lists and utterances (95 pp); Skeletal grammar (96 pp); Verb suffix notes (60 pp); Phonological materials (213 pp); Morphological notes (20 pp); Texts from Molly Sequoya, by Harris and Bender (90 pp); Ethnographical texts, tales, and myths, recorded on soundscriber with English versions, Harris and Bender (Seventeen 6-inch discs); Autobiographical texts in English taken from Molly Sequoya (Twenty-nine 6-inch discs with notes, 10 pp); Utterances from Will French (Two 12-inch discs with notes, 6 pp).

William D. Reyburn, Cherokee materials (497.3, B63c, I.2.3): Six boxes of 4 x 6 cards grammatically arranged; Grammatical notes to accompany each section of grammatical card file (567 pp); Phonological materials (105 pp); Ethnographical and other texts (88 pp); Controlled utterances (114 pp); Nine one-half hour reels of recorded texts, conversations, paradigms and other utterances, with transcriptions and translations (145 pp).

0.2. The Cherokee language is classified as the southern member of the Iroquois

linguistic stock.[1] There are at least two main dialect groups of Cherokee, the so-called western (Oklahoma) and the central or North Carolina. The use of the term North Carolina Cherokee is not well defined since there are two dialect groups in North Carolina. These are the Snowbird Cherokee near Robbinsville, North Carolina, and the Cherokee of the Qualla Reservation at Cherokee, North Carolina. This paper deals only with the Cherokee language as it is spoken on the Qualla Reservation and more particularly, in the Soco Valley area.

An utterance in Cherokee may be said to consist of one or more words occurring in free relative order.[2] Many words are made up of several morphemes. Relative order of morphemes within words is fixed. The verb in Cherokee is a morpheme sequence class which is defined by the particular morphemes which constitute the sequence. Every member of the morpheme sequence class V verb is characterized by a pronominal prefix followed by a stem element. Other classes of forms may or may not occur. Formally a verb may be stated as [±Pr + P + S ± F]. Pr indicates morpheme class prepronominal prefix, P indicates pronominal prefix, S indicates stem and F indicates suffix. Each of the above sequences may be illustrated by the following examples: [P + S] z-aduli gadu *you want the bread*, [Pr + P + S] de-z-gi səgd'a *I am eating apples*, [Pr + P + S + F] w-h-in-əgi *you go yonder and get a soft object!* [P + S + F] g-uílos-gəgi *I was washing (R)*.

It is further found that several members of classes Pr, P, and F may occur with a single stem. Thus we find the following: [Pr 1 + 2 + 3 + 4 + P + S + F] yi-we-di-d-ə-gis-i *he will not go get several round objects*, [Pr + P 1 + 2 + 3 + S + F] d-o-g-adad-eyohn-əgi *others and I taught each other*, [Pr + P + S + F 1 + 2 + 3 + 4 + 5 + 6 + 7] de-g-ə-gi-sdóhdan-el-i-dó-he-zu *was he just going about removing several soft objects from the water for her in the wrong manner?*

The purpose of this paper is to present a formal analysis of the verb structure outlined above. The procedure is to state the morpheme alternants and morpheme distributions in the four major positional classes. The classes will be taken up in order of their occurrence in the utterance. Each group of morphemes occurring in the four positional classes is treated in a formal manner which is found convenient for the data. Hence forms in classes Pr and P are presented as morphophonemes. Distributions of forms in class Pr are given in the form of a morpheme sequence diagram. Subject-object combinations in P are given in a two-dimensional chart which indicates morphophonemic combinations and orders. Members of class S which exhibit identical thematic consonants before sets of suffixes are grouped into stem classes. Class F morpheme distributional statements are given in the form of sequence formulae consisting of relative order members. Each of the procedures is stated explicitly in the appropriate section. Sufficient examples of forms are provided in each section for anyone wishing to work out alternant solutions to the problems treated here.

Before considering the verb morphology, it will be convenient to discuss various aspects of Cherokee phonemics which will contribute to the simplification of the morphological analysis.

1. The following statement is presented merely as an expansion of the original statement of the phonemes of North Carolina Cherokee.[3] The expansion arises from two sources, dialect variation and additional

[1] Harry Hoijer et. al., Linguistic Structures of Native America, Viking Fund Publications in Anthropology, No. 6, New York, 1946.

[2] A word is set up morphologically in Cherokee as a sequence of phonemes occurring in the environment # . . . #.

[3] Ernest Bender and Zellig S. Harris, The Phonemes of North Carolina Cherokee, IJAL 12.14–21 (1946). This article will be referred to in the text as B-H.

materials gathered. **1.2** and **1.4** are to be found in the University of Pennsylvania Library but not here; **1.3** follows.

1.3. There is a frequently occurring voiceless element in Cherokee whose environment ranges over one or several phonemes depending on certain phonemic and/or morphemic conditions. As a convenient term of reference this devoicing element will be referred to as H. All forms cited in **1.3–1.3.1.4** will be given in phonetic transcription with the position of H marked by H. Voiceless consonants w, y, and n are written under °. The purpose of this section is to state explicitly the distribution of this element, its devoicing effect on neighboring elements, and to indicate by a long component[4] marker a satisfactory notation for voicelessness arising from the occurrence of H. This operation, as will be seen throughout, is of considerable morphological convenience. It is noted that phonemic distinctions have been arrived at in B-H. The present consideration and alternant manner of indicating certain types of voicelessness arises from our concern for writing morphemes.

Relative to the notation for symbolizing voiceless consonants B-H states '... there is a morphemic h (non-first person) which when infixed between vowels or before s appears as h, but when infixed before other consonants often appears in the devoicing of these consonants. ... deziganega *I tie string* when associated with this morphemic h [has] the phonemic form dakenega ...' (3)

Now, it is true that an h element is associated with non-first persons in numerous verb stems and related[5] noun forms. Thus we find: zi:dlihá[6] *I am sleeping*, gaHlihá *he is sleeping*, gaHłədí *sleep*, ga:dlihəgí *I was fighting*, dayósdaHłilí *another and I will fight*, aHłsdí *fight*, galido:gí *I just now ran away*, ulitHgísəgí *he ran away*, atHgiyasdí *race*, ogi̊nHsogá *another and I are pointing*, tsHsiwasgá *you are buying*, go:dasgá *I am building a fire*, goHtasgá *he is building a fire*, stHtəgagá *you du. just heard*, kHtosədiá *he is hanging up a long object*. However, it is also true that this devoicing element H is not exclusively non-first person, but has various other morphemic restrictions. This is illustrated by extension of the above examples to include some first person forms preceded by a: agiHłənəgí *I slept*, (z ~ g *I* respectively are replaced by g ~ gw after a), agwaHłilidí *I am about to fight*, yagwalitHgísə *if I run away*, agwóHtanəgí *I did build a fire*, akHsiwasgá *I am purchasing*, akẘHsogá *I am pointing at it*, akẘHgilóəgí *I did wash flexible object*, agwóHtanəgi *I did build a fire*.

On this basis alone we may still speak of morphemic non-first person H and say that H has a variant a ... H in some positions. However, a may also occur without H: agwadulihá *I want*, agigu'ugá *I'm belching*.

Furthermore, H occurs in all first person subject forms not preceded by a as vowel lengthening in the position of H. That is, it is possible to state the position of H comparing the forms in a paradigm with the first person form. Examples: zilonu:ehá *I am tricking him*, agilonuHeləgí *he tricked me*, galonuHelí *he just tricked him*, dazi:yelií *I'll mock him*, hiHẙeliəgí *you did mock him*, ga:təgiá *I hear*, akẘHtəgísəgí *I heard*, daga:nuwoí *I will wear it*, sgiHn̊uwozazú *did you put it on me?*

Having now established the intermittent

[4] See Zellig S. Harris, Methods in Structural Linguistics 125-46 (Chicago, 1951) for a discussion of phonemic long components as a method for stating phonemic distributions.

[5] The term related is used here as it does not semantically, at least, impose histories or class priorities on the elements as does derived.

[6] It is convenient to state here the second condition accompanying the dl variant of phoneme l. In **1.2.1** dl was indicated as a variant of l when the following vowel was dropped, e.g. gadudldiá *I am begging* where a in l-d varies freely with dropped a. The same applies to i in those environments. A further condition is the occurrence of l before a vowel when preceded by morphophonemic H, i.e. in first person forms not preceded by a. Examples: zi:dliha *I am sleeping* but agiHlihəgí *I slept*, ga:dlihá *I am fighting* but agwaHlihegí *I fought*.

presence of a devoicing element H which alternates morphologically with vowel lengthening we may state its general distribution and devoicing effect on neighboring vowels and consonants. Devoicing resulting from H is dependent upon the position H occupies in a given stem, the consonant and vowel combinations preceding H, and the consonant following H. It will be convenient, then, to state the distribution of H within stems and to consider vowel loss and devoicing in the various environments of H.

1.3.1. H may occupy (a) initial, (b) medial and (c) final positions in stems. Initial position is defined as immediately following the stem vowel.[7] Examples: desdiHsiwasgá *you du. are coughing*, h-iHyelíəgí *you did mock him*, g-oHtasgá *he is building a fire*, g-a:təgiá *I hear*. Final position is defined as immediately preceding the stem final consonant[8] if present, otherwise immediately before the initial consonant or vowel suffix. Examples: gadoni:á *I conjure*, adoniHá *he conjures*, gadoní:sgəgí *I was conjuring*, adoníHsgəgí *he was conjuring*, dagadonə:í *I will conjure*, dədonəHí *he will conjure*, gadəlí:sgoí *I always breathe*, oginadəlíHsgoí *another and I always breathe*. Medial position may be defined as those positions occurring between the positions defined for initial and final H. Examples: yagwałHsgísə *if I dance*, hałHsgisgoí *you habitually dance*.

1.3.1.1. There are two general statements which may be set forth here and need not be repeated in each section below. (1) H occurring between vowels appears phonetically as h, e.g. gali:eligá *I am happy*, haliHeligesdí *be happy!*, gadoni:á *I conjure*, adoniHá *he conjures*, zi:uyisihá *I am taking a long object from the water*, aHuyisə́ *he just now took a long object from the water*. (2) H after ə, o, u, e before s appears phonetically as h, e.g. gə:sgá *I am weaving*, gəHsgá *she is weaving*, gəno:sasgá *I am sweeping*, gənoHsasgá *she is sweeping*, dagəgu:staní *I will sift it*, uwagúHstanəgí *she sifted it*, gəguHsdihá *I am sifting it*, ganeHsgesdigwó *she kept on frying it*.

The following sections state the distribution of H in the stem and indicate the manner of devoicing and vowel drop in the various environments of H.

1.3.1.2. H in stem initial position.

1.3.1.2.1. When stem vowel i is followed by H before s, z, and voiceless g, d this i is lost and the preceding g *1st sg.* and z *2d sg.*[9] are devoiced. This may be illustrated by a paradigm indicating all of the subject pronominal prefixes. The position of H is marked by H. akHsiwasgá *I am coughing* (agiHs > akHs), doginiHsiwasgá *another and I are coughing*, dogiHsiwasgá *others and I are coughing*, deginiHsiwasgá *you and I are coughing*, degiHsiwasgá *you, others and I are coughing*, tsHsiwasgá *you sg. are coughing* (zaHs > tsHs), desdiHsiwasgá *you du. are coughing*, deziHsiwasgá *you pl. are coughing*, uHsiwasgá *he is coughing*, duniHsiwasgá *they are coughing*. Other examples of H after i in stem initial position are: akHkusgwalozá *I just bumped my elbow*, tsHkusgwalozá *you just bumped your elbow*, detsHkwalagídəzú *did you ever snore?* dezi:kwalagiá *I am snoring*, akHtayóhləgí *I did ask for it*, zi:tayohihá *I am asking for it*, tsHtayohlə́hizú *did you ask for it?* akHzəgá *I am sick*, tsHzəgesdí *you'll be sick*, uHzə́istaneí *I heard he accidentally became sick*.

1.3.1.2.2. When stem vowel i is followed by H before n, y, or w a preceding g *1st sg.*, z *2d sg.*, and g *3d sg.* are devoiced with-

[7] Verb stems and many noun stems in Cherokee, as in other Iroquois dialects, exhibit a stem initial vowel. Any one of the six vowel phonemes may occur in this position. For a possible stem vowel reduction to facilitate morphological analysis see **3.1**, **3.4.1**, and **4.1**. For a discussion of this aspect of Iroquois verb morphology see C. M. Barbeau, Classification of Iroquoian Radicals with Subjective Pronominal Prefixes, Canada Department of Mines, Geological Survey, Memoir 46, No. 7, Anthropological Series, Ottawa, 1915.

[8] See **4** passim. for a discussion of thematic consonants and stem classification.

[9] z *2d sg.* is followed by a in i-stems. For the analysis of what constitutes the basic stem vowel see **3.1**.

out the loss of the stem vowel. akiHwasgá *I am buying*, tsaHwasgá *he is buying*, but sdiHwasgá *you du. are buying*, iziHwasgá *you pl. are buying*, igiHwasgá *you, others and I are buying*, akiHnlusidí *I am climbing*, tsaHnalusidí *you sg. are climbing*, uHnalusidí *he is climbing*, ogiHnalusidí *others and I are climbing*, zi:yaketsgá *I am peeling it*, akiHyakétshəgí *I peeled it*, tsaHyakétsəhə́ *don't peel it!* zi:yəsgiyihá *I am choking him*, akiHyəsgiyihá *he is choking me*, tsaHyəsgiyihá *you are choking him!* hiHyəsgiyə́ *choke him!* dazi:yelií *I'll mock him*, hiHyelíəgí *you did mock him*, akiHyelísgəgí *he was mocking me*, dezi:nogiá *I am singing*, dekaHnogiá *he is singing*, sdiHnogí *you du. sing!*

1.3.1.2.3. When stem vowels i and a are followed by H before l this l is devoiced and the stem vowels remain. zi:ləsgá *I am sleeping*, gaHləsgá *he is sleeping*, gaHləsgəgí *he was going to sleep*, ga:ləihá *I am tying it up*, gaHləihá *he is tying it up*, haHləzá *you tie it up now!* agwaHl̥óləgí *I did tie it up*, wizaHl̥óisí *let him go tie it for you*, ga:dlihoí *I habitually fight*, aHlihá *he is fighting*.

1.3.1.2.4. When stem vowel a is followed by H before n this n is devoiced without the loss of the stem vowel. daga:nuwoí *I'll wear it*, agwaHn̥uwóəgí *I did wear it*, haHn̥uwozá *you wear it!* sgiHn̥uwozazú *did you put it on me?* zaHn̥uwesdí *you be wearing it!*

1.3.1.2.5. When stem vowel a is followed by H before s, z, and voiceless d stem vowel a is lost and the preceding consonant (or consonant cluster gw) is devoiced. Again this may best be illustrated by a phonetically transcribed paradigm giving all subject pronominals before a. ga:təgiá *I hear*, akẘHtəgísəgí *I did hear* (agw-a), ostHtohí *another and I just yelled* (osd-a), otsHtohí *others and I just yelled* (oz-a) in̊Htohí *you and I just yelled* (in-a), itHtohí *you, others and I just yelled* (id-a), tsHtəganəgí *you did hear* (z-a), stHtəgagá *you du. just heard* (sd-a), itsHtəgagá *you pl. just heard* (iz-a), kHtosədiá *he is hanging a long object* (g-a). Other examples illustrating a before initial H followed by s, z are: akẘHsogá *I am pointing at it*, ogin̊Hsogá *another and I are pointing at it*, okHsogá *others and I are pointing at it*, gin̊Hsogá *you and I are pointing at it*, ikHsogá *you, others and I are pointing at it*, tsHsogá *you sg. are pointing at it*, stHsogá *you du. are pointing at it*, itsHsogá *you pl. are pointing at it*, uHsogá *he is pointing at it*, un̊Hsogá *they are pointing at it*.

1.3.1.2.6. When stem vowel a is followed by H before g this g is devoiced and the stem vowel a remains. ga:guyə́ *I just paid for it*, agwaHkuyəí *he paid for me*, aHkuyihá *he is paying for it*, dəgwaHkuyəelí *he'll pay for me*.

1.3.1.2.7. When stem vowel ə is followed by initial H before ə, g, d stem vowel ə is lost and the consonant immediately preceding is devoiced. Devoicing and loss of vowel here is similar to that described in **1.3.1.2.5.** However, the segments following H are different. gə:də́əsgá *I am putting a flexible object in the fire*,[10] tsHdə́nəhə́ *don't put (F) in the fire*, kHdə́əgá *he just put (F) in the fire*, stHdə́əgá *you du. put (F) in the fire*, itsHdə́əgá *you pl. just did put (F) in the fire*, gə:əsgá *I am putting (F) in the water*, skẘHəsí *you put (F) in the water for me!* kHəgá *he just did put (F) in the water*, in̊Həgá *you and I just did put (F) in the water*, həHəgá *you put (F) in the water!* stHənidóhəgi *you du. were going about putting (F) in the water*, gə:giloá *I am washing (F)*, kHgiloá *he is washing (F)*, həHgilozá *you wash (F)!* yuẘHgiloá *if he washes (F)*, akẘHgilóəgí *I did wash (F)*, itHgilozá *you, others and I just did wash (F)*, in̊Hgilozá *you and I just did wash (F)*.

1.3.1.2.8. When stem vowel ə is followed by initial H before n this n is devoiced without loss of stem vowel. gə:nihá *I am*

[10] Many Cherokee verbs exhibit classificatory elements which express semantic categories of flexible, round, long, and liquid characteristics. In translations these meanings will be represented respectively by (F), (R), (L), and (Q). For a discussion of these forms and their morphophonemic replacements see **4.6** passim.

beating it, gəH̊nihá *he is beating it*, doginadadəH̊nilidísəgí *another and I were about to beat each other but didn't*, agwəH̊niləgí *he beat me*.

1.3.1.2.9. The remaining stem initial vowels followed by H are o, u, e. In no case does the vowel drop. Devoicing occurs on the consonant following H. go:dasgá *I am building a fire*, goHtasgá *he is building a fire*, zoHtanə̊hizú *did you ever build a fire?* agwoHtanəgí *I did build a fire*, degoHtanidóhesdí *he'll be going here and there building fires*, ge:dinegá *I am setting out posts*, agweHtinósəgí *I did set out posts*, heHtəgá *set out a post!* geHtinegesdí *he will be setting out posts*.

1.3.1.3. H in stem medial position.

1.3.1.3.1. When i is preceded by l, w, or d and followed by H before z, s, g, and voiceless d this i is lost and the preceding l, w, or d is devoiced. daziyóli:zí *I will recognize him*, agwołHzəgí *he did recognize me*, gołHgí *he just now recognized him*, gali:sgiá *I am dancing*, agwałHsgísəgí *I did dance*, hałHsgisgisgó *are you a dancer?* sgwałHsgií *dance for me!* gadi:səhihá *I am defending it*, hatHsəhihezú *did you defend it?* atHsəhihá *he is defending it*, dagəyowi:selí *I'll watch for you*, agiyowH̊səgí *I watched for you*, dənowH̊sí *they will watch*, gali:tuwoá *I am combing my hair*, hałHtuwozú *are you combing your hair?* thałHtuwoizú *are you going to comb your hair?* dagali:tuwoí *I am going to comb my hair*.

1.3.1.3.2. When i is followed by H before w this H appears as h plus w with neither vowel drop nor devoicing. dazili:wozí *I am going to die*, galiHwogá *it is dying*, dagaliHwozí *it is going to die*, uliHwozidí *it is about to die*.

1.3.1.3.3. When a is preceded by g, y, n, z, l and followed by H before z, s, and voiceless d this a is lost and the preceding g, y, n, z, l is devoiced. ziga:tə̊lesgoí *I habitually pass through*, dəkHtəlesí *he will pass through*, gaga:tihá *I am peeking*, akHtihá *he is peeking*, dəkHtaní *he will peek*, hakHtá *peek at it!* dagaga:taní *I will peek at it*, gaga:zəwasdihá *I am winking*, gwakHzəwasdasí *she winked at me*, hakHzəwastanéhesdigwó *keep on winking at her!* agwakHzə́wasdihá *it causes me to wink*, ziləweya:sdihá *I am winding it*, galəweH̊Hsdihá *he is winding it*, galəweH̊Hstaní *he is going along winding it*, agiləweH̊Hsdótanəgí *I wound it by mistake*, zina:siní *I am pulling it along*, ganH̊siní *he is pulling it along*, zina:sənəgiá *I am pulling but not moving it*, anaH̊sənəgiá *they are pulling but not moving it*, dagaH̊siní *he will pull it*, zila:sdaló̊sgá *I am patching it*, gałHsdaló̊sgá *she is patching it*, dagałHsdaləní *she will patch it*, hiłHsdaló̊gá *you patch it!* cf. gałHsdaló *a patch*, zila:zotasgá *I am roofing the house*, dagałHzotaní *he will roof the house*, hiłHzotagá *you roof the house!*

1.3.1.3.4. When o is preceded by gw, d and followed by H before g, d this o is lost and the preceding gw, d is devoiced. ziləgwo:dihá *I give thanks*, hiləkwH̊Hdá *you be thankful!* galəkwH̊Hdihá *he gives thanks*, dagaləkwH̊Htaní *he will give thanks*, daziləgwo:taní *I will give thanks*, galido:gí *I just ran away*, galido:gísohná *I am through running away*, ulitHgíseí *I heard that he ran away*, dəlitHgisí *he is going to run away*, yalitHgí *if he runs away*.

1.3.1.3.5. When e is followed by H before y this y is devoiced without loss of e. Medial H after u appears as h plus the following consonant. gade:yohá *I am going around*, dagade:yalí *I will go around*, hadeH̊yohesdí *you keep going around*, adeH̊yohəgí *he was going around*, zílu:gí *I just arrived*, gáluHgí *he just arrived*, uluHzeí *I heard that he arrived*, hiluHgí *you came here!* uniluHzeí *I heard they arrived*.

1.3.1.4. H is in final position when it immediately precedes the stem final consonant (when that consonant occurs), otherwise it occurs before the initial suffix vowel. There is no vowel loss. When l follows H l is devoiced. gadoni:á *I conjure*, adoniHá *he conjures*, dagadonə:í *I will conjure*, dədonəHí *he will conjure*, gadoni:sgəgí *I was conjuring*, adoniHsgəgí *he was conjur-*

ing, gadonə:ohná *I am through conjuring*, adonəHohná *he is through conjuring*, gadonə:idóhoí *I habitually go about conjuring*, adonəHidóhoí *he habitually goes about conjuring*, gadonə:taní *I am going along conjuring*, adonəHtaní *he is going along conjuring*, gadəli:á *I am breathing*, adəliHá *he is breathing*, yagwadəlóHi *if I breathe*, hadəliHazú *are you breathing?* gadələi:dohá *I am going about breathing*, anadələHidohá *they are going about breathing*, gadəli:sgoí *I always breathe*, oginadəliHsgoí *another and I always breathe*, hadəliHsgesdigwó *you will keep on breathing*, gadeli:sgesdigwó *I will keep on breathing*, zi:ihá *I am killing it*, aHihá *he is killing it*, uHłeí *I heard that he killed it*, dayuHlí *he will kill it*, ziyə:ihá *I am going inside*, uyəHləgí *he did go in*, dəyəHlí *he will go in*.

2. The purpose of this section is to list the members of morpheme class Pr (prepronominal prefix) and to state their distributions relative to each other. Morpheme alternations will be indicated by morphophonemes. Morpheme distribution will be given in the form of a morpheme sequence diagram.

2.1. There are twelve morphemes discovered in Class Pr:[11] (1) a *general tense prefix*, (2) da *future*, (3) da *movement toward speaker*, (4) de *plural*, (5) di *distant position*, (6) di *distant imperative*, (7) hə *back*, (8) hə *again*, (9) ni *already*, (10) wi *movement away from speaker*, (11) yi *negative, condition*, (12) zi *as, past action*.

Morphemes of class Pr may appear in four phonemic types: C, V, CV, and CVC. In the examples Pr morphemes are separated from the following class P (Pronominal) by a hyphen: d-agíləhidi *I am about to pick corn*, d-hilósə d-agóyoli *if you sg. come this way I'll shoot*, a-giwónisidísəgi *I was about to make a speech but didn't*, a-gwadólə?əgi *I took a breath*, ni-zilói *I had already killed it*, wi-ganóhili *it is flying away*, dayozínəwani *others and I will doctor him*, dayuwodhali *he will stumble*.

[11] Morphemes (1), (2), (11), and (12) have discontinuous parts occurring in class F.

2.2.1. Automatic alternation. Nearly all of the alternation occurring within morphemes of class Pr is stateable in terms of alternation between phonemes in phonemically differentiable environments. Pr morphemes occur only before a limited number of phonemes, these being the initial phonemes of class P (Pronominal): g, z, h, s, a, i, o, u, and before a few additional consonants when members of Pr occur in relative orders. The alternations described below are given in terms of the BASIC forms of the morphemes listed in **2.1.** These statements indicate the environments in which each phonemic replacement or loss occurs. There are environments which are not described. These remaining environments serve to indicate the conditions for the BASIC form. The first seven statements of alternation are ordered so that number seven may assume the preceding six. Parenthesized numbers in the examples indicate the morpheme from the list in **2.1** whose alternation is being described.

[1] Morpheme-final a merges with a following a to yield ə. də-dadesi *he will limp* da(2) + a *he*, də-gwodhali *I will trip him* da(2) + a *him*, də-yə́ini *he is swimming this way* da(3) + a *he*, də-náisəgi *they came this way* da(3) + an *they*.

[2] Morpheme-initial a and i are lost after morpheme-final i and e respectively. di-nedoha *they are walking about yonder* di(5) + an *they*, di-'liha *he is fighting yonder* di(5) + a *he*, de-nə'dasga *you and I are putting pl.* (*R*) *in the fire* de (4) + in *you and I*, de-zə'dasga *you all are putting pl.* (*R*) *in the fire* de(4) + iz *you pl.*

[3] Morpheme-final a and e are replaced by i when the morpheme is preceded by i. yi-di-go'dani *he will not build a fire* yi(11) + da(2) + g *he*, yi-di-d-hədhani *you won't put pl.*, (*R*) *in the fire* yi(11) + de(4) + da(2) + h *you sg.*

[4] Morphemes ending in a add y before o, u, e. day-osdadídhahi *another and I will drink* da(2) + y + osd *another and I*, dayuwodhali *he will trip* da(2) + y + u *he*, day-ai *he is coming this way* da(3) + y + a *he*.

[5] Morpheme-final i merges with following i as a single pulsed long i. di-izadehnái *place where you all were living* di(5) + iz *you pl.*, cf. di-zadehnái *place where you sg. were living* di(5) + z *you sg.*, hi-iniwóniha *you and I are speaking again* hi(8) + in *you and I*, hi-idal'zidóhəsga *we all are teaching again* hi(8) + id *you, others and I*, hi-izal'zidóhəsga *you all are teaching again* hi(8) + iz *you pl.*, cf. hi-zal'zidóhəsga *you sg. are teaching again* hi(8) + z *you sg.*

[6] Morpheme di(5) is replaced by z before o, u, e. yi-z-unilósə *if they come to that place* yi(11) + di(5) + un *they*, z-oginedolái *the place where another and I were* di(5) + og *another and I*, z-udehnái *the place where he was living* di(5) + u *he*, z-edoha *he is walking about yonder* di(5) + e *he*.

[7] Morpheme-final vowels drop before another vowel except as stated in [1]–[5]. d-anə'dasga *they are putting several (R) in the fire* de(4) + an *they*, n-agiloói *I had already broken (R)* ni(9) + a *it*, w-anigd'əgi *they were going away* wi(10) + an *they*, w-unilúzəgi *they arrived there* wi(10) + un *they*, d-ozó'dasga *others and I build fires* de(4) + oz *others and I*, h-osdighani *another and I are taking the animal back* hə(7) + osd *another and I*.

[8] Before h and s morpheme-final unaccented vowels drop with devoicing of the preceding consonant. d-hadóosi *you will fall* da(2) + h *you sg.*, d-s'giduhəsi *bake several loaves for me!* de(4) + s *you sg.*, d-higd'i *you are coming this way* da(3) + h *you sg.*, w-s'digizu *did you du. go get (R)?* wi(10) + sd *you du.*, y-hiwadh *if you find him* yi(11) + h *you sg.*

[9] Morpheme de(4) has a freely varying alternant do when followed by d. do-dagalígəhi ~ de-dagalígəhi *I will dive*, do-dazídunhi ~ de-dazídunhi *I'll bake them.*

2.2.2. Non-automatic alternation. The remaining Pr morphemes have variants in morphologically differentiated environments.

[1] Morpheme (4) has the variant di when verb suffix sdiyi *infinitive* occurs. agwaduli di-gelasdíyi *I want to feed them*, uduli di-dídhasdiyi *he wants to drink them*, cf. adídhasga *he is drinking it.*

[2] Morpheme (8) has the variant hi when suffix ga *present action* occurs. hiiniwóniha *you and I are talking again*, hi-idal'zidóhəsga *you, others and I are teaching again.*

[3] Morpheme (6) has the variant g before h *you sg.* g-hals'dayənhuga *you come in from yonder and eat!* g-hisgweliya *you yonder spell it!* am g-hin'zuga *you yonder bring in the water!*

[4] Morpheme (2) has the alternant də before hə(8). də-h-al'zidohni *you will teach again*, də-h-aniwónisi *they will talk again.*

2.3. The purpose of **2.2.1** was to indicate the alternating phonemes within morphemes whose alternation is stateable in phonemically differentiated environments. All morphemes having a given phoneme or phonemic sequence exhibit the same type of alternation in equivalant phonemic environments. These alternations are stated as occurring in an arbitrary member of each morpheme unit. This BASIC member may be said to consist of a morphophoneme or sequence of morphophonemes. Hence, no new morphophonemic symbols need be introduced to indicate the writing of any form. The morphophonemic writing of the BASIC member plus the statements of the conditions for alternation make it possible to give the correct phonemic rendering of any form. The examples below, then, will occur with the Pr morphemes indicated in morphophonemic notation. The number in square brackets which follows the utterance refers to the conditions for alternation stated in **2.2.1.** If no number follows, the form is written phonemically and indicates the BASIC form, e.g. da-hadóosi [8] *you will fall*, indicates that the conditions for alternation stated in [8] require that this form be rendered phonemically as ḍhadóosi. yi-unenései [7] *they didn't go home*, de-izə'dasga [2] *you all are putting several (R) in the fire*, de-ziyoiha *I am shooting them*, di-anedoha [7] *they are walking about yonder*, da-sdo'dani

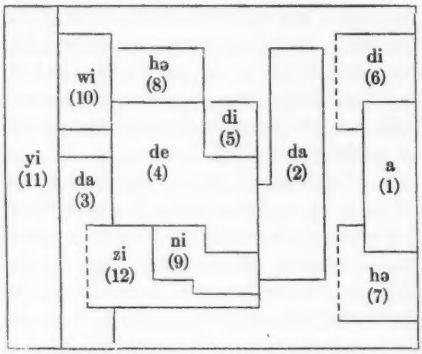
[8] *you du. will build a fire*, ghilo di-uwolha [6] *someone is sitting yonder*, wi-izadaguga [5] *you all go throw (F) away*, wi-ganóhili *it is flying away*, da-anégəgi [1] *they were coming this way*, zha yida-agánhani [1] *it is not going to rain*, da-osdadídhahi [4] *another and I will drink*, yida-go'dani [3] *he will not build a fire*, esg da-higd'i [8] *you are coming this way*, da-oganóhili [2] *it is flying toward you, others and me*, dhaline hə-adídhasga [7] *he is drinking again*, hə-zighani *I am returning the animal*, di-sdisgewliya [8] *you du. yonder spell it!* ni-agasgoi [7] *it was already raining*, ni-zigoói *I already saw him*, zi-osdáisəgi [7] *as another and I were walking along*.

2.4. Morphemes of class Pr may occur with each other as well as singly. It is possible to state the distribution of these morphemes relative to each other by detailed sentences, formulae, a diagram showing the relative order of the morphemes, and by a diagram indicating the actual sequences that may occur.[12] The morpheme sequence diagram is used here as it provides in a small space a great amount of distributional information which other statements are incapable of doing.

In the morpheme sequence diagram given in **2.4.1** numbers refer to the numbered forms in **2.1.** A sequence is indicated by any line drawn from the left of the diagram to the right which does not pass through a horizontal bar or turn to the left. Broken vertical lines may not be passed. A sequence may originate with any form in the diagram. Hence the diagram may be considered three dimensional. Following the diagram are utterance examples which illustrate some of the sequences indicated in the diagram. These forms are cited in the morphophonemic notation suggested in **2.3.**

[12] See Harris 350-60 for a discussion of the use of detailed diagrams for presenting structural relationships.

2.4.1. Morpheme sequence diagram.



zha yi-da-gə'dani (11) + (2) *he is not going to put (R) in the fire*, zha yi-wi-de-da-inigisi (11) + (10) + (4) + (2) *you and I will not go get several (R)*, wi-da-inigisi (10) + (2) *you and I will go get (R)*, da-a-gwaledheli (2) + (1) *I will struggle*, zha yi-da-ayə́ini (11) + (3) *he is not swimming in this direction*, ni-a-gwådayholói (9) + (1) *I had already denied it*, zi-ni-de-a-gwalénii (12) + (9) + (4) + (1) *by that time I had stood on my feet*, zha yi-wi-gano?ili (11) + (10) *it is not flying away*, wi-de-hinegi (10) + (4) *you go get several containers of liquid*, wi-a-gwedoləgi (10) + (1) *I just walked down there*, yi-de-a-g'inogísə (11) + (4) *if I sing*, zi-ni-a-gwáda-woói (12) + (9) + (1) *I had already bathed by that time*, zha yi-wi-da-zinegisi (11) + (10) + (2) *I will not go get a container of liquid*, zha ghilo yi-da-ganhga (11) + (3) *no one is lying there*, de-da-ozə'dani (4) + (2) *others and I will build several fires*, wi-hə-al'zidóhəsga (10) + (8) *he is going off to instruct again*.

ETHNOLINGUISTIC NOTES FROM LEXICONS OF LOKONO (ARAWAK)

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0. In the course of some six months residence in Essequibo, British Guiana, I worked with several Lokono informants. Most of these were unpaid, volunteers from whom random words and short texts were obtained. One, Edna Fredericks of Danielstown village (a native of Morowhanna River), was paid, and most linguistic work was done with her. Another, Mrs. Katherine Wong of Tapakuma Lake, was briefly employed but contributed especially to the data contained in this paper.

The data resulting from this work includes texts, phonemic notes, morphemic notes, and a lexicon. The last, combined with comparisons (rather than comparative treatment) from de Goeje[1] provides the source for this paper.[2] It should be emphasized that though the data are restricted to lexical source, the organization of these data is influenced by anthropological literature pertaining to social organization, number systems, perceptional patterns, and acculturation.

1.1. Kinship terms are words which include morphemes of the noun stem class The noun stems involved are here divided into three groups and two sub-groups: Nai, Naii, Nb and Nc.

Terms formed from Na and Nb are used for both reference (primarily) and address (secondarily). They are always marked as possessed, either syntactically or by combination with a prefix of decade 10 = *person*. This combination with prefixes is lacking for Nc stems, which are used mainly as terms of address (stems numbered 34 and 35 have been recorded non-vocatively).

In the following list, the definitive features of the various stem-types are as follows:

Nai occurs without suffixes when both stem and possessor are singular; in more complex shapes suffix 131 is contained.

Naii is characterized by association with suffix 131 in both singular and plural forms.

Nb is defined by combination of the

[1] C. H. de Goeje, *The Arawak Language of Guiana*, Verhandelingen der Koninklyke Akademie van Wetenschappen te Amsterdam, Afdeeling Letterkunde, Nieuwe Reeks, Vol. 28, no. 2, Amsterdam (1928).

[2] This paper was suggested and directed by C. F. Voegelin, to whom I am grateful.

singular stem with suffix 132 and by combination with 151 as stem-pluralizer.

Nc does not combine with 131, 132, nor with suffixes marking gender.

All singular kinship terms formed from Na and Nb (except 3, *child*) contain final -i *male* or -o *female*. This final vowel in Na terms is considered as part of the stem, not as a morpheme added to the stem, because it there appears as an inseparable part of the stem (but still marking gender).

The following is a stem-list for kinship terms. Actual restrictions on the potential combinability of stems listed are given in the kinship charts (see **2.3**). Some stems combine with both masculine and non-masculine gender suffixes (141 and 142) and are applied to both male and female kinsmen; others combine with only one of the gender suffix pair and are uniquely applied.

Stems which are used identically but restricted to male or to female speakers are listed as alternants in this list, as .1 *man speaking* and .2 *woman speaking* under the same list number.

Nai1. -io ~ oro- *mother, parent*; Nai2. -ti ~ ititi *father*; Nai3. -sa ~ osa *child, daughter*; Nai4. -to *daughter, young consanguineal kinswoman*; Nai5. -iti ~ aiti *son*.

Naii6. -uki- *younger sibling, same sex*; Naii7.1. -buki- *older sibling, same sex*; Naii7.2. -tula- *older sibling, same sex*; Naii8.1. -ioroda- *sibling, opposite sex*; Naii8.2. -tiliki- ~ -tilikia- *sibling, opposite sex*.

Nb9. -diki- *younger sibling, opposite sex*; Nb10. -bura- *older sibling, opposite sex*.

Naii11. -re- ~ -rai- *spouse*; Naii12. -uribi- ~ -uribia- *sibling-in-law, same sex*; Naii13.1. -ronai- *sibling-in-law, opposite sex*; Naii13.2. -ranomal- *sibling-in-law, opposite sex*.

Nai14. -kuru *mother-in-law*.

Naii15.1. -madoko- *parent-in-law, opposite sex*(?); Naii15.2. -moko- *parent-in-law, opposite sex* (?).

Nai16. -ititi *son-in-law*; Nai17. -itio *daughter-in-law*.

Naii18. -ku- *grandparent*, Naii19. -duku- *grandparent, opposite sex*; Naii20. -lukun- *grandchild*; Naii21. -in- *uncle through parent of same sex*; Naii22. -dain- *uncle through parent of opposite sex*; Naii23. -io- *cousin, kinsman, friend*; Naii24. -iaboa- *aunt*, de G.: *stepmother*; Naii25. de G.: iteboa *uncle, stepfather*; Naii26. -iteboa- *nephew*, de G.: *stepchild*; Naii27. -taboa- *niece*, de G.: *stepchild*.

Nc31. aua *grandfather, old man*; Nc32. tete *grandmother, great-grandmother, old woman*; Nc33. hebe *grandmother, old woman*; Nc34. bebe *older sibling, parent's sibling, "elder"*; Nc35. mama (*my*) *mother*; Nc36. papa (*my*) *father*.

1.2. The following morphemes combine with Na, Nb, and Nc to form kinship terms:[3]

Decade 10. *person* (11. dA- ~ dV-[4] *first person singular* and 15. uA- ~ uV- *first person plural* will appear in the examples which follow); 121. -no ~ -io *Na and Nc stem pluralizer*, 131. -tI[5] copular suffix definitive of Na terms (also combines with verbs and adjectives as a substantivizer), 132. -d- singular suffix in Nb terms; 140. *gender*: 141. -i *masculine human*, 142. -o *non-masculine human, and non-human*; 151. -na ~ -n- (1) Nb stem pluralizer, (2) indicates that the kinsman stands in that relationship to more than one individual.

Examples including Nai are: daio *my mother* (11 + Nai1); daionato *my mother, who has other children* (11 + Nai1 + 151 + 131 + 142); uaionato *our mother* (15 + Nai1 + 151 + 131 + 142); daionoti *my parents* (11 + Nai1 + 121 + 131); uaionoti *our mothers, our parents* (15 + Nai1 + 121 + 131).

[3] This enumeration is limited to morphemes involved in forming terms of address and reference; not included is prefix set 20, which derives adjective stems from nouns, nor the various suffixes which combine with such adjectives, nor numerous noun suffixes.

[4] -A- = usually -a-, but zero before certain stems with initial i-; -V- = vowel determined by initial stem vowel.

[5] -I = -i when final, -I- + -i = -i, -I- + -o = -o.

Examples with Naii are: datilikiti *my brother* (11 + Naii8.2 + 131 + 141); uatilikianti *our brother* (15 + Naii8.2 + 151 + 131 + 141); datilikianoti *my brothers* (11 + Naii8.2 + 121 + 131).

Examples with Nb are: dadikidi *my younger brother* (11 + Nb9 + 132 + 141); uadikidona *our younger sister* (15 + Nb9 + 132 + 142 + 151); dadikina *my younger siblings, my juniors* (11 + Nb9 + 151); uadikina *our younger siblings, our juniors* (15 + Nb9 + 151).

Within this framework—or superimposed on it—the two criteria of relative age and relative sex are terminologically elaborated, the first in reference to primary kin of Ego's generation (siblings), the second in reference to primary and secondary kin, whether affinal or consanguineal (siblings, parents' siblings, grandparents, siblings- and parents in law).

In chart 1, a purely bilateral structure is revealed: primary, secondary, and more distant kin are distinguished; relationships

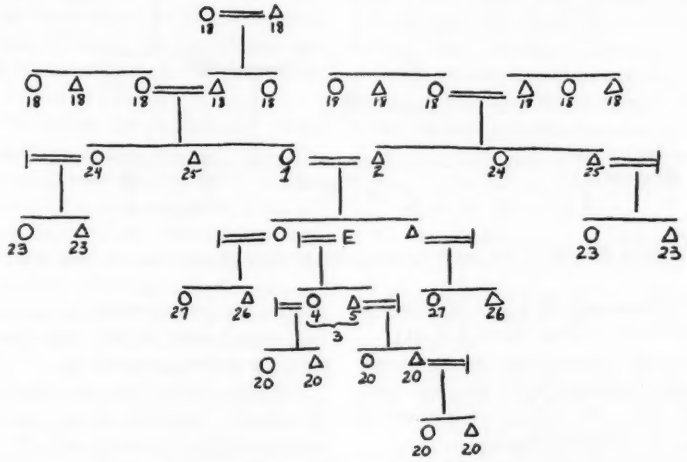

CHART 1 (with △ for male; ○ for female)

Examples with Nc are: mama (*my*) *mother* (Nc35); mamano (*my*) *parents* (Nc35 + 121).

1.3. Sociologically, the Lokono are predominantly matrilocal and are organized into exogamous named (perhaps totemic) matrilineal sibs which are not areally restricted. Kinship terminology is of the lineal type—that is, the direct descent line is terminologically distinguished from both paternal and maternal collateral kin, and these two groups are lumped together.[6] which are differentiated on the basis of relative sex and age are omitted. Sex distinctions are terminologically (as well as gramatically) recognized in primary and secondary kin in the +1, 0, and −1 generations;[7] beyond this, only the grammatical gender distinction is made in terms classificatory of kin of the +2 generation and above, the −2 generation and below, and of laterally extended kin, first cousin and beyond.

Sociologically primary relationships in-

[6] The gross shape of Lokono social organization falls into Murdock's "matri-Eskimo" subtype, corresponding in pertinent criteria almost exactly to that of the culturally similar Tupinamba of the Brazilian tropical forest (the sole representative of this subtype in Murdock's sample). See George P. Murdock, *Social Structure*, p. 228.

[7] *i.e.*, first ascending generation, Ego's generation, and first descending generation.

cluded in this chart are expressed by elementary[8] (unanalyzable) stems: 1. -io *mother*, 2. -ti *father*, 3. -sa *child*, 4. -to *daughter*, 5. -iti *son*.

Sociologically secondary relationships are expressed by derivative[8] (morphemically complex) terms, in which the first element is a primary term and the second is a morpheme common to all, 41. -Ebua-[9] *"step-"* or *"by extension"*. Formulae for these can be written as follows: 24. -iaboa- *aunt* (1 + 41),

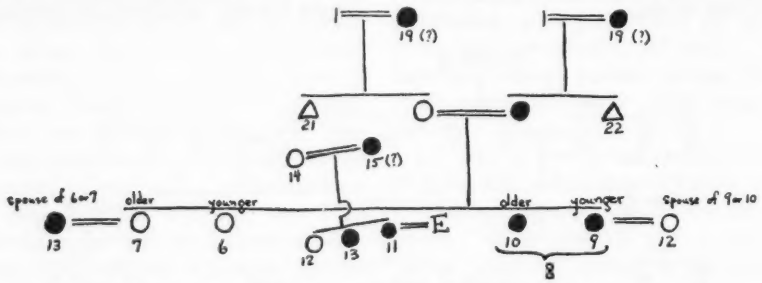

CHART 2 (with △ for male; ○ same sex as Ego; ● opposite sex from Ego)

25. de G.: iteboa- *uncle* (2 + 41), 26. -iteboa- nephew (5 + 41), -taboa- *niece* (4 + 41).

Classificatory elementary terms cover more distant relationships: 18. -ku- *consanguineal elder*, 20. -lukun- *consanguineal junior*, 23. -io- *collateral kinsman*.

In chart 2, affinal and consanguineal relationships are differentiated on the basis of relative age and sex. Terms for these are more obscure in morphology than for those in chart 1. A neat analysis seems impossible. Such correlations between sociological relationships and phonological sequences as have been noted are given below.

Consanguineal kin terms which are clearly elementary, or which are unique (and therefore unanalyzable) are listed first: 6. -uki- *younger sibling* (*same sex*), which appears also as a general *sibling* term in 7.1, 8.2 and 9 (but not in 8.1, 7.2 or 10); 7.2 -tula- *older sibling* (*same sex*); 21. -in- *uncle* (*through parent of same sex*).

Sequences which occur only in combination are: 42. -bu- which appears in two sibling terms, 7.1 and 10, with the common meaning *older* (but not in 7.2); 43. -da ~ -dV- which appears in four *sex-differentiated* consanguineal terms, 8.1, 9, 19, 22, and possibly in one affinal term, 15.1 (but not in 8.2 or 10); 44. -tili- occurs only in 8.2 (note similarity to 7.2, however); 45. -ioro- ~ -ra-: the first alternant occurs only in 8.1, the second only in 10, with the common meaning *sibling, opposite sex*.

Formulae follow for the remaining morphemically complex stems marking consanguineal kin: 7.1 = 42 + 6, 8.2 = 44 + 6, 8.1 = 45 + 43, 9 = 43 + 6, 10 = 42 + 45, 22 = 43 + 21, 19 = 43 + 18.

11. -re- ~ -rai- *spouse* is an elementary term; it may be contained as initial element in 12. -uribi- ~ -uribia- *sibling-in-law* (*same sex*), 13.1 -ronai- and 13.2. -ranomal- *sibling-in-law* (*opposite sex*).

The terms for parents-in-law are probably confused in our lexicon. Of the three, 14. -kuru appears elementary. 15.1—by comparison to 15.2—seems complex, 46. -ma- ~ -mo- + 47. -ko (compare 18) = 15.2. -moko-; 46 + 43 + 47 = 15.1. -madoko-.

2.1. Component units of the Lokono system of cardinal numerals are here listed. Some of these are morphemically complex,

[8] For terminology, see G. P. Murdock, *op. cit.*, p. 98.

[9] -E- = final -o becomes -a-, -i becomes -e-.

some are probably so; as listed, however, all are stated in a system which uses capital letters—A, B, C and D—for classes of numerals whose members pattern alike in forming number terms.

A. The members of A comprise the numerals *1–4* and combine with the members of the other three classes to form the higher numbers.

A1. aba *one*. A1 is followed by a suffix, either 261. -li *masculine*, or 262. -ro *non-masculine*, when it forms a substantive (as in its occurrence in the numeral *1*) or precedes an animate noun (as in the numeral *20*); A2. bian ∼ biani- (de G.: biama) *two*; A3. kabun ∼ kabuni- (de G.: kabuin) *three*; A4. bibiti ∼ biti ∼ bis- *four*.

B. The following are periodically recurring units which define larger cycles (quinary, vigesimal and century): B1. dakabo *unit of five* occurs in two numerals, *5* and *10*, which enter into further combination; etymologically dakabo probably is *my hand* (as de Goeje states); B2. loko *unit of twenty* occurs in the numeral *20* and its multiples, which further enter into combination; etymologically it equals "*person*" (*viz.* the fact that A1 takes an animate suffix in the numeral *20*); B3. [hɔndrɛd] *hundred* appears in the numerals *100* and *200*, which provide optional substitutes for numerals containing B2.

The sequence A B implies *multiplication*; *e.g.*, aba dakabo *5* (A1 B1), bian loko *40* (A2 B2), aba [hɔndrɛd] *100* (A1 B3).

C. These two units combine with members of A and B to form higher sequential (*i.e.* non-cyclical) numerals: C1. -tian (de Goeje and other sources: -timan) *five* combines with A to form numerals *6–9*, and these combine with other units; C2. -kotibena (de G.: kutibanna) *ten*. C2 occurs in the numerals *11–19*. Etymologically it may be *from the foot/feet*.[10]

The sequence A+C or (A B)+C implies *addition*; *e.g.*, aba-tian *6* (A1 + C1), biankotibena *12* (A2+C2), aba dakabo-kotibena *15* (A1 B1+C2).

D. In a relatively extensive number system taken from one Lokono informant, numbers above twenty are composed of morphemes already listed and one suffix, 1005. -diako *upon* (or in this special context, *plus*) which is added to members of B and followed by members of A, as in abaro loko-diako abaro *21* (A1 B2+D A1), bian loko-diako bis-tian *49* (A2 B2+D A4+C1), abaro loko-diako bian dakabo-diako abatian *36* (A1 B2+D A2 B1+D A1+C1).

2.2. The following illustrates the composition of cardinal numerals and their sequential and cyclical ordering (with component units symbolized as above): 1 = A1; 2 = A2; 3 = A3; 4 = A4; 5 = A1 B1; 6 = A1+C1; 7 = A2+C1; 8 = A3+C1; 9 = A4+C1; 10 = A2 B1.

11 = A1+C2; 12 = A2+C2; 13 = A3+C2; 14 = A4+C2; 15 = A1 B1+C2; 16 = A1+C1+C2; 17 = A2+C1+C2; 18 = A3+C1+C2; 19 = A4+C1+C2; 20 = A1 B2.

21 = A1 B2+D A1; 22 = A1 B2+D A2; 23 = A1 B2+D A3; 24 = A1 B2+D A4; 25 = A1 B2+D A1 B1; 26 = A1 B1+D A1+C1; 27 = A1 B1+D A2+C1; 28 = A1 B1+D A3+C1; 29 = A1 B1+D A4+C1; 30 = A1 B1+D A2 B1.

31 = A1 B2+D A2 B1+D A1; 32 = A1 B1+D A2 B1+D A2; *etc.*

40 = A2 B2; 41 = A2 B2+D A1; *etc.*, as in the twenty decade.

50 = A2 B2+D A2 B1; 51 = A2 B2+D A2 B1+D A1; *etc.*, as in the thirty decade).

80 = A4 B4; 100 = A1 B1 B2, or A1 B3; 200 = A2 B1 B2, or A2 B3.

The system listed by de Goeje[11] differs from this only in the numeral *15*, which contains new morphemes and appears to be literally "*one side foot*." Of the seven Arawak systems from published sources

[10] De Goeje translates *on the surface of the foot*.

[11] De Goeje, *op. cit.*, p. 186 ff.

included in Kluge,[12] three extend higher than twenty. Within the stable framework of the vigesimal cycle—*20*, *40*, *60*, etc. always equal A B2—the higher numbers seem more subject to variation than the lower. This variation is both lexical—another suffix (unidentified) substitutes for 1005. -diako; and syntactic—in one case *21* = *twenty, one upon-it* rather than *upon twenty, one*, as it may be translated in our system given above. It is interesting that in no case is the combination A+C2 (*11–19*) repeated at higher levels (*i.e.*, to form decades 30, 50, etc.).

To interpret on the basis of rather meagre data, the Lokono number system seems formalized on the lower levels (1–10), somewhat less so in the decade 11–20, and subject to individual variation (within a stable framework) in higher decades.

3.1. Color terms are formed from members of the adjective stem class. Two patterns of stem-formation are found, those in which the stem consists of a single morpheme (A), and those in which the stem consists of one or more nouns followed by suffix 161. -dian- *similitive* (N, N+N + 161 = A).

The following list gives single-morpheme color term stems: (1) harira- *white, buff, light grey*; (2) hehe- *pale yellow, green, blue, orange, and grey*; (3) subule- *medium yellow, blue, pink, orange, tan, green*; (4) karime- *black, dark brown, dark blue*; (5) imoro- *various shades of green*; (6) kore- *red, pink, wine, rust, brown, yellow*; (7) bunaro- *brown, purple, yellow-orange, buff, grey*; (8) blu- *various shades of blue*; (9) balisia- (balisi *ashes*) *greenish-grey*; (10) iauare- (iauare *rainbow*) *dusty pink*; (11) adarama- (may contain ada *wood*) *light orange, light grey*.

The following list gives stems consisting of two (N+161) and three (N+N + 161) morphemes: (12) karokori-dian- (karokori *gold*) *yellow metallic*; (13) sakoi-bara-dian- (saki *sp. of bird*, bara *feather*) *medium blue*; (14) koriuaka-bara-dian- (koriuaka *parrot*, bara *feather*) *light blue*; (15) auiama-uda-dian- (auiama *pumpkin*, uda *skin*) *bright green*; (16) aranso-uda-dian- (aranso *orange*, uda *skin*) *bright yellow*; (17) kakau-uda-dian- (kakau *cocoa*, uda *skin*) *bright rust-brown*.

3.2. Color terms usually occur as substantives, *i.e.* with the suffix complex 131 + 140 (see **2.2**); for example, imoro-to *green, something green*, karokori-dian-to *golden color, something golden*. This is the invariable form given in response to the question, "What color is that?" It is also the form in which color terms precede nouns which they qualify: subule-to kudibiu *blue* (*or yellow, etc.*) *bird*, kore-to koroho *red flower*, harira-ti uadili *white man*.

Color term stems are combinable with other suffixes—potentially with all those combining with the adjective class—such as decade 170. *tense*, and 310. *person*; for example hehe-ka-no *it is pale* (A + 171 -ka *indicative* + 314 -no *3rd person non-masculine*).

When stems marking color are themselves preceded by modifiers, the modifier (also an adjective combines with the substantivizing complex and the modified stem with 121. -n *subordinator* : tola-to imoro-n *dark green*. Such instances are rare.

3.3. The suggestion is now made that the unanalyzable terms 1–7 constituted a system in pre-contact Lokono composed of (1) a four-step scale of degree of pigmentation: harira- *unpigmented*, hehe- *palely pigmented*,[13] subule- *brightly pigmented*, karime- *darkly pigmented*; and (2) a three-step scale based on stages in plant maturation: imoro-

[12] Theodor Kluge, Die Zahlenbegriffe der Völker Amerikas, Nordeurasiens, der Munda und der Palaioafricaner; ein dritter Beitrag zur Geistesgeschichte des Menschen, Berlin (1939), pp. 17–19.

[13] Occasionally translated by informants as *pale*; de Goeje believes it to be derived from ehe *urine*.

unripe,[14] kore- *ripe*,[15] bunaro- *over-ripe, burned*.[16] These seven Lokono terms become, on the level of translation, equated with English *white, pale* or *yellow, yellow, black*; *green, red*, and *brown* or *purple*; these are the English glosses usually given when informant translation is requested. If one compares this list to the spectrum, it is seen that there is no label for the segment including various shades of *blue*. Thus there is a hiatus which is filled by English blu- (8), the one borrowing which has become, grammatically, an integrated part of Lokono color terminology.[17]

It is now apparent that stems 9–11 and 12–17 are descriptive, identifying a color with or comparing it to a given natural phenomenon. The formation N+161=A of 12–17 is a common one in Lokono, and there is no reason to suspect that its use in reference to color is an innovation. However, it is perhaps significant that in this sample it is used predominantly (13–17) for bright colors of light to medium intensity.[18] If our suggestion concerning the precontact meanings of the simple terms is correct, then these five all denote shades that would have been included under the single term (3) subule-. Their coinage, then, may be connected with a present-day tendency to limit the use of this term (especially in the direction of equivalence to English *yellow*); informants with a cross-cultural point of view are aware of its ambiguity.

[14] This is the only gloss given for the term by de Goeje (although I was never able to elicit this translation from informants).

[15] Translated as *ripe* by one informant.

[16] As in bunaro-ka meli *burned bread*.

[17] Although uait *white* and aranso *orange* were recorded from one highly acculturated informant, they constitute complete single-morpheme utterances and I regard them as outside the pattern. De Goeje also lists purpura *purple*, which is probably a similar case.

[18] Terms from 13–17 were recorded only in the process of identifying paper color samples in a formal test, whereas all others were also recorded in more informal utterances.

4.1. This section gives loans in Lokono from Spanish, Dutch and English.

4.1.1. The following fall into the noun class.

From Spanish: kimisa *cloth*, pero *dog*, karta *book, paper*, sapata *shoe*, plantia *flatiron*, karina *domesticated fowl*, plata *money*, kauaiu *horse, donkey*, senta *ribbon*, baka *cow*, poroko *swine*, pratuna puratuna *plantain*, semana *week*, epaniol *Spaniard*, kaburitu *goat*, uela *sail*, molo *mill*, arakabusa *gun*, koko *coconut*, boto *boat*, saka *bag*, akosa *needle*, aranso *orange* (or from Dutch?).

From Dutch: lepele *spoon*, boroko *trousers*, hemede *shirt*,[19] hemode *jacket*,[19] sepo *soap*, tafolo *table*, sopi *rum*, sikapu *sheep*, kopero *brass, copper, copper pot*, paipa *pipe*, kana *jar*, planka *board, flooring*, skulu *school*, lemona *lime*, risi *rice*, sikaro *sugar*, kofi *coffee*, mondaka *Monday*, uensdaka *Wednesday*.

Several loans could equally well, on a phonological basis, be assigned to English or Dutch—for example, *board, school*, and *rice, sugar* and *coffee* in the above list. Since the various crops were introduced under Dutch influence and the aborigines were most exploited in their cultivation in the years of Dutch colonization, one suspects that the source of these crop names, at least, is Dutch. However, such items are no doubt reinforced as stable vocabulary by resemblance to English cognates.[20] Days of the week, *e.g. Monday* and *Wednesday*,[21] are obvious examples of Dutch loans reshaped by latter-day English influence—the final -daka < Dutch -tag, the initial syllables modified in the direction of English models.

mama (*my*) *mother*, and papa (*my*) *father*

[19] Both from hemd *shirt*.

[20] Compare Penard's remarks on the probable stabilizing influence of Portuguese cognates on Spanish loans in Suriname Lokono. See T.E. and A.P. Penard, European Influence on the Arawak Language, Westindsche Gids 9. 167–8.

[21] mendaka, wunsdaka in Suriname Lokono (Penard, *op. cit.*, 170).

could be loans from any (or all) of the three model languages.

Other stabilized English loans are: diara *jar*, meli *flour*, *bread*, iono *onion*, aleti *light*, *lamp*, kokonoto *coconut*, tioti *church*, portikesi *Portuguese*.

A superficial layer of English vocabulary items—phonologically unmodified—are occasionally used by complete bilinguals; for example: *basket*, *brush*, *cup*, *ice cream*, *hundred*, *August*, *white*, *pagua* (ultimately from Hindi). On the other hand, when such loans are used in inflected form, even by the same speaker, they become modified, at least as to vowel allophones and final consonants—*e.g.* dabaskitan *my basket*.

De Goeje's vocabulary, mainly from Surinam,[22] yields twice as many nouns imitating Dutch models as are listed here. Besides many of the same items noted above (and similarly modified forms such as silotoro *key*), there are others such as koning *king*, gouverneur *governor*, and hondert *hundred*, which are quite unmodified. These seem to be recent Dutch loans comparable to the unmodified stratum of English words noted above. The same source also gives most of the Spanish loans listed here, in similar phonetic shape, with a few additional—sambuleru *hat*, kampana *bell*, bandola *harp*, etc. Spanish loans are apparently a stabilized element in the Lokono vocabulary in both Dutch and English areas.

The noun class in Lokono can be divided into four groups on the basis of combination with four alternants of suffix 121. *subordinate*, -n, -ia, -te, and zero. In sequence with N, the suffix marks possession. The following possessed forms of borrowed nouns have been noted, indicating that the first three of these alternants, but not the zero alternant, are productive with new lexical items: -lepelen, -borokon, -hemeden, -hemoden, -kimisan, -peron, -kartan, -boton, -paipan, -baskitan, and -komairin *makmi* (from Spanish comadre); -aransote, akosate, -sepoia, -melia, and frenia *friend* and -fomania *foreman* (the last two from English).

4.1.2. Loans which fall into any other than the noun class are rare; *e.g.* blu- *blue* (English) is inflected as an adjective (see **3.1**). danki *thank you* (from Dutch *dank u* or English *thank ye*?) is a borrowed salutation; similarly, de Goeje gives -odi- *good-day*, *hello* (a Suriname Creole salutation, probably ultimately from English), but as a stem in verb formation, not as a free form (see **4.2**).

4.2. Suffix 141. -da *verbalizer* derives verbs both from old Lokono nouns,[23] and from new Lokono morphemes (*i.e.* borrowings). The latter may be present in the lexicon in absolute form—as nouns, following the regular pattern of the language; or they may be borrowed solely to serve in verb formation.

The following are examples of the first group: plantiada *to iron* from plantia *flatiron*, uelada *to sail* from uela *sail*; de Goeje gives remoda *to row* from remo *oar* (a Spanish loan).

A verb is also formed from the salutation danki: dankida *to thank*. Similarly de Goeje gives -odida *to greet* (see **4.1**).

The following are examples of the second group, in which the loan morpheme is found only in verbal shape: sportdua *to debauche* (from English 'to sport'), baptisada *to baptize*, rida *to read*. De Goeje's vocabulary lists as well -leseda *to read* (from Dutch lezen) and, from Brett's biblical texts, praiseda, circumciseda, prophiseda, and sacrificeda.

4.3. The following list gives circumlocutions in which the first noun is a loan, the second[24] an old Lokono morpheme (all loans

[22] De Goeje, *op. cit.*, Additional examples from this source are found in C.F. Voegelin and D.H. Hymes, Dictionaries in American Indian Languages, Proceedings of the American Philosophical Society, 1953 (in press).

[23] For example, arua *tiger* + 141 = aruada *to creep*.

[24] In all two-noun circumlocutions, the relation is possessor-possessed, and the second noun stem combines with suffix 121 (see **4.1.1** for the phonemic shapes of this suffix).

here are also listed under **4.1**): karinasa = karina + osa *child* = *hen's egg*, perosa = pero + osa = *puppy*, aletira = aleti + ura *juice* = *lamp oil*, sikarora = sikaro + ura = *sugar wine*, sikaroko = sikaro + -oko *pus* = *sugar-cane sap*, sikarisi = sikaro + isi *head* = *sugar-cane tassel*, baka siroko = baka + siroko *flesh* = *beef*, poroko kihi = poroko + kihi *fat* = *pork*, augus ukatia = august + kati *moon* = *August*.

There is one example in which the sequence is old Lokono plus loan: uamaritakuanti ukartun = uamaritakuanti *our maker* (see **4.5**) + karta = *Bible*.

4.4. This list gives two-noun circumlocutions (following the same construction as in **4.3**) in which both stems are old Lokono: kusike = kusi *eye* + eke *covering* = *spectacles*, kutike = kuti *foot* + eke = *stocking*, ibinahu sikua = ibinahu *dancing* + sikua *house* = *dance hall*, ibihi sikua = ibihi *medicine* + sikua = *dispensary*, adaili sikua = adaili *God* + sikua = *church*, ituri tonoli = ituri *howler-monkey* + tonoli *cold* = *whooping cough*.

4.5. The following list gives examples of the most common type of polymorphemic circumlocution used for acculturation items. This is an instrumental noun formed from a verb plus the suffix 181. -kuanahu ~ -kuana *instrumental*. To this may be added the suffix complex 131 + 140 (see **1.1**) forming an agentive noun.

arukuanahu (aruka *cut* + 181) *scissors*, emekebokuanahu (emekeboka *work* + 181) *working clothes*, akonakuanahu (akona *walk* + 181) *stairs*, akaratokuanahu (akarata *bury* + 181) *coffin*, *burial clothes*, adonkakuanahu (adonka *sleep* + 181) *bed*, adukuanahu (aduka *see* + 181) *mirror*, daridakuanahu (darida *run* + 181) *bicycle*, bulutikuanahu (buluta *write* + 181) *pencil*, iakosokuanahu (iakosa *erase* + 181) *eraser*, oniabo andukakuanahu (oniabo *water* anduka *dip* + 181) *bucket*, uamaritakuanti (ua- *1st person plural* + marita *make* + 181 + 131 + 141) *God*.

This pattern is almost exclusively followed when the reference is to non-indigenous items, especially tools and machinery; when tested in eliciting, however, it is said to be permissible in application to indigenous culture material. The words formed are not stabilized vocabulary items; it is not uncommon to find variant referents for the same word, or different words for the same referent. For example, compare de Goeje's examples, atorodokuanahu (atoroda *lay down* + 181) *bed*, and adokokuana (adoka *see* + 181) *telescope*, with items in the list above.

Another agentive suffix, 183. -arin, is added to nouns (including participles as in **4.6**) as in abodedahuarin (abodedahu *fishing* + 183). Parallel to this is amarikotahuarin (amarikotahu *teaching* + 183) *preacher*.[25]

4.6. The following are participles, nouns derived from verbs by suffix 182. -hu. These words are broad in reference and sometimes the same word has been noted for both general and specific, as well as both new and old, phenomena. It seems more suitable to call them general terms which can incorporate new cultural experiences, rather than extensions of old terms. ibinahu (ibina *dance* + 183) would be most commonly applied to a European-style gathering in a dance hall, aiokahu (aioka *shoot* + 182) to a hunting expedition involving firearms. Other examples are: ibeiokahu (ibeioka *play* + 182) *music*, *harmonica* (de Goeje gives *organ*), afakotahu (afakota *pass* + 182) *race*, aiatahu (aiata *show* + 182) *cinema*, adiahu (adia *speak* + 182) *speach*, *list*, *governmental order*.

4.7. The following old Lokono nouns name new culture items by extension: simara *arrow*, *gun*; hikihi *fire*, *match*; adaili *chief* or *ruler*, *God*; fudi *leader*, *foreman*; kasakabo *day*, *Christmas*; uatinati *our father*, *God*.

4.8. The Lokono noun class is the open

[25] More examples of this type of formation involving acculturative material are found in Penard, *op. cit.*, p. 172.

class for borrowings and has been through Spanish, Dutch and English contact periods; other borrowings are sporadic. Verbs are regularly derived from borrowed nouns; and loans which are verbs in a model language and which form the basis of verb derivation in Lokono must still be considered formally members of the noun stem class. Nouns also enter into collocations to form multiple word circumlocutions for describing what is new, what is acculturated. Yet polymorphemic circumlocutions by affixation involve the verb stem class.

In my own sample of five hundred lexical entries, loans from Spanish, Dutch and English account for six per-cent of the total; yet loans constitute ten per-cent of the three hundred nouns out of all entries in my lexicon. Polymorphemic circumlocutions can be said to be half as numerous as loans.

In de Goeje's Lokono vocabulary of some 1400 items, by comparison, loans amounted to seven per-cent of the total listing. Circumlocutions can be said to be virtually absent. Referent extensions in each vocabulary total less than half a dozen.

AMUESHA (ARAWAK) PHONEMES

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0. Introduction
1. Vowel phonemes
2. Consonant phonemes
3. Stress

0.1. Amuesha[1] has been classed as Arawak.[2] It is spoken by several thousand[3] Indians living in the area between the town of Oxapampa and the Pachitea River which is in the lowlands of Peru east of the Andes.

0.2. Amuesha has 9 vowel phonemes/e, e·, e?; a, a·, a?; o, o·, o?/; 22 consonant phonemes /pʸ, ç̌, mʸ, ñ, l; p, t, k, c, č, ç̌, s, š, z, b, d, g, x, m, n, w, y, r/; and a phoneme of stress /ˊ/.

1.1. Amuesha has three basic vowel phonemes /e, a, o/. There is considerable fluctuation phonetically between submembers. The submembers of /e/ are [e, ɪ, i]. Mid close front unrounded [e] varies freely with high open front [ɪ]: nexsé [nehsé ~ nehsí] *my brother*. High close front unrounded [i] occurs after bilabial consonants: má·me [má·mi] *a little while*; bes [bis] *cotton*; pentár [pintár] *you know*.

The submembers of /a/ are [a, ə]. Low open central unrounded [a] occurs most frequently : á·to·n *much*. Mid close central unrounded [ə] occurs infrequently and may vary with [a] before /k/ as in nanák [nanákʰ ~ nanə́kʰ] *excedingly*.

The submembers of /o/ are [o, u, ʊ]. Mid close back rounded [o] varies freely with high close back rounded [u] as seen in oyowá [oyowá ~ uyuwá] *wild pig*. The high open back rounded [ʊ] generally occurs before stops: not [nʊtʰ] *my hand*, but may also vary with [u] or [o] as in ayón [ayón ~ ayún ~ ayʸʊ̂n].

1.2. Each of the basic vowel phonemes has a lengthened counterpart: /e·, a·, o·/. These contrast with the short vowels in the following illustrative pairs of words: ne·mo·ç̌ápʸ *I'll wring your neck*, nemo·ç̌á·p *I climb*; na·sóč *I hit the head*, nasóč *I file*; zo·mwé? *dead*, zomwé? *he grasped*. Long vowels have submembers similar to those of the short vowels; however, the submembers [ə] and [ʊ] of the short vowels /a/ and /o/ respectively, do not occur lengthened. In addition, when /e·/ follows /k/ the first part of the vowel is backed as in /ke·/ [kə̆e] *large kind of parrot*.

1.3. Each of the basic vowel phonemes has a laryngealized counterpart: /e?, a?, o?/. These contrast with the short vowels in the following illustrative pairs of words: nexsé? *I lost*, nexsé *my brother*; naxpwé·na? *I'm going to bathe myself*, naxpwé·na *I'm bathing myself*; pʸó?ta? *Is it yours?*, pʸóxta *go ahead*.

They contrast with the long vowels in the following pairs of words: ç̌eč ne?ñ *now I am going to seek*, čečné·ñ *he is carrying (on his*

[1] Data have been collected during various field trips during the years 1947–50 under the auspices of the Summer Institute of Linguistics. The major informants were Arturo Pataro, Rosa Wayol and Valerio Pishagua. All of these are bilingual. For the arrangement of the material I am indebted to Viola Waterhouse for the help given to me at the University of Oklahoma in the summer of 1951.

[2] See Handbook of South American Indians (BAE-B 143, 3.536–37). But note also 6.217 of the same where Mason questions the Arawak affiliations of the Amuesha.

[3] It has been impossible to give an exact count of the Amuesha population because none of the Amueshas live in villages, but are scattered over a wide area. For that reason statistics vary greatly. In 1881 the Franciscans stated that there were 2000; in 1925 Tessman says that only 100 survived; the 1940 census gives 4000, while an earlier one gives 9000.

back); sa?p *lake*, ca·p *night*; o?č *going to*, o·ç̌ *bird*.

/e?/ may vary with its submember [ɪ?] as seen in /ce?m/ [ce?m ~ cɪ?m] *buzzard*; following /p/ the submember [i?] occurs: /pe?šé·z/ [pi?šé·š] *parakeet*.

Laryngealized vowels vary in quality according to their position in the word. In final position, the vowel is phonetically [V?] with a rather fortis glottal closure, as in co? *fire*. In prefinal position, the vowel is phonetically somewhat longer than a short vowel, and varies from a greater to a lesser degree of laryngealization: a?pá *stay!* The laryngealization, however, is clearly distinguishable from phonemic length. Preceding voiced consonants, especially nasals, laryngealized vowels vary from laryngealized timbre to [V?ᵛ], i.e., a sequence of vowel, glottal stop and slightly rearticulated vowel: ma?ñóz [ma?ᵃñóš] *deer*. Preceding a word final nasal, the nonphonemic rearticulation may be actualized as a somewhat syllabic quality of the nasal: ta?m *don't know*.

1.4. All vowels occur word initially, medially and finally. Initial: esókop *why?*, ató·n *I'm a wild cow*, otén *he told me*; e·ç̌é? *recently*, a·tó·n *much*, o·k *white man*; e?mo·ñeté·n *he is quarrelling*, a?cé·z *mud*, o?č *going to*. Medial: acéz *it hurts*, nasóč *I file*, not *my hand*; pe·séz *bitter*, na·sóč *I beat*, no·t *I tell*; pe?šé·z *large parakeet*, ta?té? *grass*, čo?s *rat*. Final: e?po·té *he hid*, axpwé·na *he is bathing*, ne?nó *a wolf*; še· *small wolf*, na· *I*; ç̌o· *potatoes*; epo·té? *it stung*; axpwé·na? *he has gone to bathe*; co? *fire*.

There are no vowel clusters.

2.1. Amuesha has a series of palatalized consonants: /pʸ, ç̌, mʸ, ñ, l/. Of these /pʸ, mʸ, ñ/ each contrast with a single non-palatalized counterpart: /pʸ/ contrasts with /p/ as seen in anáxpʸ *he answered him*, anáxp *he answered*; /mʸ/ with /m/ as in ešóta necozámʸo *entered my saw*, ešóta nenámo *entered my mouth*; /ñ/ with /n/ as in ña· *he*, na· *I*.

The bilabial palatalized consonants have a more perceptible offglide than the alveolar. In both bilabials, the offglide is voiced in prefinal position as in pʸámʸa *you also*. /pʸ/ has an allophone [pʸ] in word final position: caxčepʸ *small pole*. /mʸ/ varies from perceptible offglide in non-final position to no offglide but difference in quality in final position: nexcó·mʸ *I eat*; this might be described in articulatory terms as resulting from the tongue being raised to the position of [i] simultaneously with the bilabial closure.

/ç̌/ contrasts with the non-palatalized affricates /c, č, č̣/, as seen in the following examples: ç̌o·p *an insect*, čop *it grows*, ç̌o·p *corn*; ç̌o? *grandfather*, co? *fire*. Like the non-palatalized affricates, /ç̌/ is phonetically an aspirated variety.

/l/ has no non-palatalized counterpart, but it is included in this group because of its palatalized quality: pokólo [pokólyo] *in the house*. The palatalized offglide is voiceless in word final position: pokól [pokólʸ] *house*.

2.2. Non-palatalized consonants are divided into several series. There are three voiceless stops: bilabial, alveolar and velar /p, t, k/. pačéz *one*, tóra *he opens*, ka·k *fish*. These stops have aspirated allophones occurring in word final position: eláp [elʸápʰ] *shotgun*, enét [enétʰ] *sky*, o·k [o·kʰ] *white man*. Preceding another stop or an affricate, stops may be either aspirated or unreleased: axptál *bark of a tree*, e·tkél *a fish*, pokté? *it is finished*.

There are three aspirated affricates: alveolar, alveopalatal and retroflexed alveopalatal /c, č, č̣/, axcéc *soft mud*, exčé·c *hair*, e·ç̌é? *recently*.

There are three sibilants: alveolar, alveopalatal and retroflexed alveopalatal /s, š, z/. The alveolar and alveopalatal sibilants occur only voiceless: se· *ant*, še· *small wolf*. The retroflexed sibilant has two allophones: voiceless [š] occurs word final or before a voiceless consonant as in a·z [a·š] *here*, á·zpa [á·špa] *here it is*; voiced [ž] occurs elsewhere

as in nokzé·na [nokẓé·na] *I am living*. For orthographical convenience the retroflexed sibilant is written /z/. For contrast with /š/, note also nokšé·na *I am content*.

There are three fricatives: voiced bilabial, and voiced and voiceless velar /b, g, x/. Examples of /b, g/: amabé·zo *it is not delicious*, agéñ *he receives it*. /x/ has two allophones: [h] occurs preceding another consonant as in axpʸ [ahpʸ] *he gave him*; [x] occurs elsewhere as in ax *thorn*.

There are four voiced continuants: bilabial and alveolar nasals /m, n/; bilabial and palatal nonsyllabic vocoids /w, y/. Example of m: amá *no*. /n/ has two allophones: [ŋ] occurs before /k/ as in womenk *strong*; /n/ occurs elsewhere as in ašén *donkey*. /w/ has two allophones: voiceless [W] before stops as in wawté·na *barks*; and voiced [w] elsewhere as in amawé·zo *he does not return*. /y/ has two allophones: voiceless [Y] occurs before stops or affricates or word finally as in peyçaxtén *teach me*, neytáz *my door*, awéy *let's go*; voiced [y] elsewhere as in yompór *our father*.

There is a voiced flap vibrant /r/ as in ro·r *flower*.

2.3.1. All single consonants occur in word initial and medial. Initial: pʸa *you*, çe *now*, mʸoz *air*, ñe·t *they*, lat *an insect*; pa·c *ground*, tó·ra *he opens*, ka·k *fish*; caxč *firewood*, čo·č beans, ço·p *corn*; saʔp *lake*, šoz *lukewarm*, zo·má *he died*; bes *cotton*, go·z *fishhook*, xo *devil*, ma·m *yucca*, not *my hand*, waxpá *he comes*, ya· *we*; ro·r *flower*. Medial: akó·pʸa *slowly*, áteça *thus*, omʸá *there it is*, koñéʔç *little bit*, atólop *hen*; ca·páxç *tomorrow*, atáz *big*, akóš *needle*; acéz *it hurts*, ečá·z *hard*, o·çén *comb*; wása *monkey*, ašén *donkey*, ñó·zaʔ *recently*; wábe *small catfish*, agáxpʸ *he receives*, xaxoréʔ *turtle*; amá *no*, po·ná *large ant*, ko·wé·n *good*, koyém *pot*; aró·t *dove*.

All single consonants except /g/ and /w/ have been found in word final: notáxpʸ *my finger*, o·ç *bird*, nexcó·mʸ *I eat*, oñ *water*, wa·rál *large butterfly*; ço·p *corn*, not *my hand*, o·k *white man*; pa·c *ground*, e·č *meat*, apeçré·ç *vine*; os *cloud*, remó·š *monkey*, a·z *here*; še·b *a fish*, ax *thorn*; nexcó·m *my fire*, ayón *rainbow*, mo·y *potatoes*; ča·r *year*.

2.3.2. Consonant clusters. Word initial and final clusters are limited to two consonants. Initial clusters have a stop as either the first or the second member, except for /cz/ and /mw/: czáyeç *later*, mweñále *there are none*.

Clusters with stops as the first member are /pw, pr, tr, ky/: pwéreç *its root*, pro·rer *its flower*, troxpé·ç *vine*, kyamwéc *sleeve*.

Clusters with stops as the second member are /čp, zp, čt, št/: čpozé·na *he is hungry*, zpelmé·c *toe*, čte? *he pulls*, štámwec *cushma*.

Word final clusters consist of either a nasal or /x/ followed by a stop or an affricate. Clusters with nasal as the first member are /mp, nt, nk, nç, nč, nç/: nexpámp *my yard*, nemálant *my nose*, woménk *strong*, nonç *canoe*, ne·čánč *I lift*, konç *wall*. Clusters with /x/ as the first member are /xp, xt, xç, xč, xç/: axp *a bean*, ext *he robbed*, naxç *my abdomen*, sexč *he sows*, noxç *my sister*.

Word medial clusters may be of two or of three consonants. Clusters of two include all those mentioned above as occurring word initial and final, plus others now to be shown. Those beginning with palatalized consonants are /çt, çs, çč, ñp, ñs, ñç, ñm, lp, lč, lm/: pe·ceçtón *make me a point*, neçsér *my scissors*, capaççáʔ *he is going to tomorrow*, óñpa *water*, oñsás *stream*, extáñçeʔ *it must be a robber*, añmʸá *this one also*, čelpóç *butterfly*, polčéč *squirrel*, zpelmé·c *toe*. Those beginning with non-palatalized stops are /pc, tt, kt, kn/: nopcá·reña *my Adam's apple*, esót pʸótte·n *What are you doing?* poktocé·n *noon*, po·knár *drum*. Those beginning with non-palatalized affricates are /ct, cz, cn, čč, čm, čw, čy, çk, çr/: merácte·na *it's lightning*, aczé·ç *the sun is hot*, acná·ñec *sickness*, pweččó·m *his carrying strap*, nečmetápʸ *I know you*, selé·čwen *around 5 o'clock P.M.*, awečyézmweʔ *let's catch it*, keçké·na *it's crushing*, apeçreç

vine. Those beginning with sibilants are /sp, sw, šč̣, šy, zk, zn/: aspéneč̣ *mountain*, opwetá·reswen *it has dawned already*, košč̣é *guan*, wawankešyá *bat*, á·zkaye *here*, ózno *wind*. Those beginning with x are /xl, xz, xy, xr/: pexló? *your grey hair*, wáxzo *frog*, naxyóm^{y}a *I like it also*, nexroróp *my mirror*. Those beginning with continuants are /mč, ms, mm, wt, wr, yč̣, ym/: nánemča? *I'm going to carry it*, namexčámsap^{y} *I'm accusing you*, pémma *be quiet*, wawté·na *barks*, nowraxté·n *I'm hot*, neyč̣é? *I learn*, o?č aweym^{y}á *let's go too*. Those beginning with /r/ are /rm^{y}, rk, rs/: pozárm^{y}oxč̣ *of this food*, rekarké·n *dances*, neka·rsén *my trousers*.

Clusters with three consonants begin with nasals, affricates, /x/, or stop. Clusters beginning with nasals are /mpw, mpr, mmw, npw, nks, nč̣k, nnt/: kómpwer *raft*, komprečtál *bark of balsa wood*, nommwé·na *my place to sleep*, neyenpwé·n *I'm helping*, tanksé·na *dances*, newárenč̣kor *my rooster*, énnto *to the sky*. Clusters beginning with affricates are /čmw, čpw/: o?č nečmwé·na? *I'm going to have a bowel movement*, ačpwé? *thread*. Clusters beginning with /x/ are /xpt, xpw, xč̣r/: axptál *bark of a pacayo tree*, noxpwé·za *he returned late*, naxč̣réč̣ *my intestines*. There is one cluster of three which begins with a stop: /kšp^{y}/ akšp^{y}atósan *he saves*.

3. Stress appears to be phonemic, although no conclusive contrastive pairs have thus far been discovered. Stress tends to occur on the penult: awačé·kma *early*. It may, however, occur on the ultima: wawankešyá *bat*. Less frequently it is antepenultimate: né·motap^{y} *I visit you*. In some words there appears to be free fluctuation in stress placement: o·čén ~ ó·čen *comb*. In some words there appears to be fluctuation in stress placement according to occurrence in context as contrasted with occurrence in isolation. Note the stress in po·póñ *other*, as compared to the same word in a sentence: wáxpa pó·poñ óček *other dog comes*.

Further investigation may reveal some correlation between stress and long vowels, or between stress and sentence rhythm.

A NOTE ON THE IDENTIFICATION OF SOME ISLAND CARIB SUFFIXES

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1. In verbs
2. In adjectives
3. In nouns

In my recent paper on Grammatical Formatives of Island Carib,[1] the following suffixes are listed separately: -gua (stative) and -gu (qualificative) as adjectival suffixes 112.1 and 112.1; -gua (reflexive) and -gu (collective) as nominal suffixes 132.1 and 132.2; -ga ~ -g (stative), -ua ~ zero (mediostative), and -ua ~ -u (passive) as verbal suffixes 152.2, 153, and 156 respectively. I now believe some revision of this analysis and arrangement to be necessary.

1. In the first place, the fact (exemplified under section **2.5.2** of the above-mentioned paper) that not every stative adjective has a corresponding verbal derivative, nor every stative verb a corresponding stative adjective, does not justify the assignment of -gua in stative gumúgua *at an end* (with underlying: gumú *finished*) to one morpheme (112.1), and that of -gua in stative agúmucagua *to come to an end* (with underlying: agúmuca *to finish*) to two others (152.2 + 153). Plain honesty demands that we recognize the same suffix—be it simple or complex—in verbal and adjectival forms; the more so since there occur in both what we may call 'stativized passives', in which stative -gua follows passive -ua, as in uadáoruagu̧iá *we are being shut up*, and goráuagua *in a state of having been bound*, and which, according to the classification in my earlier paper, are analysable as: 35 + dao *covered, shut up* + 151.8 + 156 + 152.2 + 153 + 155 + 157.2, and gorá *tied* + 156 + 112.1 respectively.

[1] IJAL 18. 150–165.

But then what of middle-voice -ua (153) in such verbs as aiáhua *to weep*, and agágudua *to waken*? Unlike stative and passive adjectives and verbs, which all contain an underlying (non-stative or active) form of the same word-class as themselves, middle-voice verbs are either primary words (like aiáhua), or else contain only underlying forms of another or other word-classes (like agágudua, which contains the noun águ *eyes*, and its adjectival derivative gágu *having eyes, -eyed*). On the other hand, it remains true that middle voice and passive, middle voice and stative, stative and tensive (152.3, -ha) are mutually exclusive; although middle voice may be followed by tensive—aiáhuaha *to weep continuously*, tensive by passive—áluahaua *to be searched for*, passive by stative—adáoruagua *to be in a state of having been shut up*, stative by causative (154, -goda ~ -god)—aráidaguagoda *to cure* (*to make get well*), and causative by participial (155, -UnE ~ -U)—aráidaguagodóni *curing*. Here, however, a further complication arises; for the participial may be followed by the passive, which, as we have seen, otherwise precedes stative -gua—laráidaguagodonúa *his being cured*. So that we find, according to my previous classification, the following combinations: 153 + 152.3 (aiáhuaha); 152.3 + 156 (áluahàua); 156 + (152.2 + 153) (adáoruagùa); (152.2 + 153) + 154 (aráidaguagodà); (152.2 + 153) + 154 + 155 (aráidaguagodóni); (152.2 + 153) + 154 + 155 + 156 (aráidaguagodonúa).

The occurrence of a form: láunagodúa luágu *he was sent for*, at one time led me to seek the factor determining the passive suffix's change of relative position in the presence of the causative. However, such

other examples as: láfarunúa *his being beaten* (33 + afara *to beat* + 155 + 156), and tarîhunùa *her being seen, her appearance* (34 + aríha *to see* + 155 + 156), show this not to be true. Perhaps it may be assumed that the causative, as a structural unit, is no longer present in áunagoda *to send* (*for*), —with which compare: áunaha *to send*, áunaba *to reply*, and infrequent áuna *to heed*—any more than *dis-*, as a structural unit, is present in English *disease* at the present time; otherwise we must conclude—although this is not attested in my data—that a reversal in the order of causative and passive suffixes may correspond to a distinction of meaning, as appears to be the case in Lappish, but not in Turkish.[2]

From the above it appears necessary to disentangle middle-voice -ua from stative -gua; and to re-assign the former to the position before tensive -ha. The fact that passive -ua occurs, in forms which do not contain the participial suffix, before stative -gua (which itself occurs before the causative, and is mutually exclusive with tensive -ha) seems to justify its re-assignment to this same earlier position. Moreover, under section **2.5.3** of the paper already cited, I wrote: "The mediopassive suffix (153) differs from the homophonous passive (156) not only in distribution, but also in having a zero-alternant which occurs before the participial suffix (155)"; yet in describing the latter (under section **2.5.5** on the same page), whose morphophonemic shape is given as -UnE ~ -U, I said: "Normally, U = /u/ ~ /o/ ~ /i/ after a consonant, and is absorbed (reduced to zero) by a preceding vowel." Obviously, both statements cannot be true; or we should get forms containing non-existent clusters and final consonants as in *aiahni (for aiáhuni *weeping*), and *lagagud (for lagágudụ *his awakening*). And since U of the participial suffix is absorbed in positions other than that following the middle voice (after tensive -ha, for example), we must conclude that this absorbtion occurs in the latter position also; so that middle-voice -ua here loses only its /a/, and is thus homophonous with the passive suffix in both its alternants, -ua ~ -u. However, the second of the two passages quoted above is not entirely accurate either, and should be qualified by adding: "unless (as in the passive imperfective, the passive aorist-agentive, or elsewhere) this preceding vowel bears loud stress, in which case U is retained as /u/." This limits the sequence participial-plus-passive to word-final position—to forms, that is to say, which function syntactically as nouns; for it is gratuitous to assume (as I did in describing the passive under section **2.5.6** of the paper under revision) that the first of the geminate vowels in such a verb-form as lafarúuba *he'll be beaten* represents the participial, and the second the passive, instead of the more normal reverse order. Nevertheless, distributional differences between passive and middle voice prevent us from identifying the two suffixes; and it is therefore proposed that the verbal and verbalizing sub-classes 152 and 153 be amended to read as follows: 152. -ua ~ -u (152.1, middle voice); -ua ~ -u (152.2, passive); 153. -ha (153.1, tensive); -gua ~ -gu (153.2, stative); and, non-productively, -ba ~ -b, -ca ~ -c, -da ~ -d, -ga ~ -g, with undefined functions. Subclasses 154 and 155 remain unchanged; the aspect-markers (old 157) take their place under 156, from which the passive is deleted; while old 158 and 159 become new 157 and 158 respectively. The reference to 113 should be retained under new 156, and an addition made to the effect that either this suffix, -(u)ga, or the passive (152.2) may occur in this position, but only as word-final and when preceded by the participial (155, -UnE) ~ -U).[3]

[2] See Knud Togeby, Qu'est-ce qu'un mot? and C. E. Bazell, On the Neutralization of Syntactic Oppositions; both in TCLC V, pp. 107, and 86 (footnote 2) respectively.

[3] A more comprehensive restatement of alternations involved in the above discussion is as follows: The shorter morpheme-alternants shown in sub-

We can now say (employing the new labels) that 152.1 may be followed by 153.1, and 152.2 by 153.2; but that the latter suffix does not occur with middle-voice verbs; and that tensive middle voice and passive tensive forms are distinguished by different morpheme-orders, 152.1 + 153.1, and 153.1 + 152.2 respectively. Similarly, middle-voice and passive participles are distinguished by morpheme-orders 152.1 + 155 and 155 + 152.2 respectively, the latter sequence being always word-final. As opposed to participles, middle-voice and passive verbs containing the participial suffix (followed, in their case, by an aspect-marker) both retain the more normal morpheme-order (152 ± 153 ± 154 ± 155); but they are distinguished, where 152 immediately precedes 155, by a shift of loud stress to 152 in the passive (but not in the middle-voice) verb, thereby inhibiting the absorbtion of U in 155. For example, middle-voice áfagua (afag- + 151.9 + 152.1) *to strive or struggle* + 155 = áfagunì *strife, struggling*; while passive áfarua (áfara *to beat* + 152.2) *to be beaten* + 155 = áfarunúa *being beaten*. Similarly, 33 + áfagua + 155 + 156.1 = láfagubà *he'll strive*; while 33 + áfarua + 155 + 156.1 = lafarúuba *he'll be beaten*.

The only alternative, as I now see it, is to set up as separate morphemes and in that relative order: -ua ~ -u, middle voice; -ha, tensive; -ua ~ -u, passive; -gua ~ -gu; followed as before by causative and participial. But this arrangement adds needlessly to the number of positional sub-classes; and neither shows nor accounts for the mutual exclusivity of tensive and stative, of middle-voice and stative, or of middle voice and passive—this latter by no means semantically determined, since some middle-voice verbs, such as ébecua *to criticize adversely*, and agágudua *to waken*, can take a direct (nominal or pronominal) goal.

2. The passive (152.2), stative (153.2), and causative (154) suffixes occur also in adjectives. They have been given verbal rather than adjectival status because they are more freely employed—more productive—with verbs than with adjectives. With but few exceptions (which perhaps may be explained by obsolescence), the existence of a passive, stative, or causative adjective implies that of a corresponding passive, stative, or causative verb; while the reverse is not true. For example: passive goráua *tied*, and agórua *to be tied*; stative gorágua *tied*, and agóragua *to tie*, buʃgua *full*, and abuʃcagua *to fill up, to get full*; causative buʃgoda *filled*, and abuʃcagoda *to fill* (active). On the other hand, passive aríhua *to be seen*; stative aríagua *to watch*, and agąbagua *to listen*; causative ígiragoda *to let go of*, can contain no corresponding adjectives, since their underlying forms—aríha *to see*, agąba *to hear*, ígira *to leave*—have bound stems.

As the conditions determining the occurrence of the shorter alternants of these suffixes (see footnote 3) do not arise in the

classes 151 to 154 occur before 152.½ and before 155; U of the latter suffix (-UnE ~ -U) being absorbed by a preceding unstressed vowel, but retained after a preceding stressed vowel; so: ásaha *to sting* + 155 = ásahani *stinging*, but ábunahà *to bury* + 155 = ábunaháuni *burial*, (contrast passive ábunahanúa *being buried* < ábunaha + 155 + 152.2); áfara *to beat* + 155 + 156.5 + 158.3 = áfaruti *he who beats*, but áfara + 152.2 + 155 + 156.5 + 156.5 + 158.3 = afarúuti *he who is beaten*. Moreover, when 155 occurs as word-final in the morphophonemic alternant -U, compensatory nasalization of the vowel by which it is actualized, or of that by which it is absorbed, may or may not occur (in free or idiolectic variation); so: 33 + ábunaháuni = lábunaháų ~ lábunaháu *his burial*; 33 + átuni (< áta *to drink* + 155) *drinking* = látų ~ latu *his drinking*; 33 + agágudunì (agágudua *to waken* + 155) *awakening* = lagágudų ~ lagágudu *his awakening*. Hence, as in this last example, the participial (155)—but neither the middle voice nor the passive (152)—may be said to have a zero-alternant which occurs whenever, as the morphophonemic alternant -U, it is preceded by the middle voice (152.1). The participial suffix occurs as the morphophonemic alternant -UnE in all participles which are generalized by -(u)ga (113), passivized by -ua (152.2), or contain a pronominal suffix as goal, and in those which are independent (have no prefix before 22).

formation of adjectives, we should expect to find there only their longer forms. This expectation is confirmed in the case of the passive and in that of the causative; but as well as stative -gua, we find an adjectival -gu (112.2), homophonous with the shorter alternant of 153.2. However, and although no pair has been found in which either suffix occurs with the same base, a comparison, one with another, of such forms as geméguа *sparkling*, from the attributive denominal adjective géme *primed or kindled*, and gárigu *in pain*, from the attributive denominal adjective gári *painful*, soon convinces us that -gu must be regarded synchronically as a separate (though perhaps historically related) suffix. Adjectives containing -gu—unlike those in -gua—do not, with one doubtful exception, have corresponding verbal derivatives.

Class	Relative Position			
	−ua	−gua	−gu	−goda
Verb	2	3	—	4
Adjective	1	2	2	3
Noun	—	2	2	—

Adjectives containing more than one suffix are extremely rare; the only adequately attested sequences being: -gu (112.2) + -(u)ga (113), and -ua (152.2) + -gua (153.2). Stative and causative also occur together in adjectives, but here the evidence is conflicting; compare: cológuagoda *brought*, from colo *come*, with derégodagua *established*, from dere *hard or firm*. It may be that the non-final suffix in the latter example has here lost its grammatical function and become purely lexical; see now, however, what is said under section 1 above concerning the form láunagodua luágu *he was sent for*. Correction of the adjectival and adjectivalizing sub-classes is therefore confined to equating -ua with 152.2 (instead of with 156); equating -gua with 153.2 (instead of according it independent status); and indicating the occurrence of -goda in relative position 113 (as well as in that of 111).

3. The reason given under section **2.3** of my previously cited paper for regarding the reflexive and collective nominal suffixes, -gua and -gu, as distinct from homophonous 153.2 and 112.2 (occurring with verbs and adjectives) is irrelevant if it can be shown that the total pattern of these homonyms' distribution is consistent with their identification, and if their differentially marked meanings or functions are reconcilable. As may be seen from the accompanying table, both -gua and -gu have the same relative position in nouns as in adjectives; although there is no semantic reason why they should be thus incompatible in their reflexive and collective functions. Nor are the reflexive and stative, or the collective and qualificative functions wholly irreconcilable. The meaning of -gua in líligua *his own tail*, from líli *his tail*, and in uauáugua *about ourselves*, from uauágu *about us*, is clearly related to that of -gua in agúmucagua *to come to an end*, from agúmuca *to end or finish*, and in aráidagua *to get well*, from aráida *to place in security*, or *to put in order*, since these stative verbs may be said to mean: *to end —self, to put —self in order*. Similarly, the meaning of -gu in numádagu *my friends* (*as a collectivity—as a whole*), from numáda *my friend*, is related—though less obviously—to that of -gu in díligu *coldish*, from díli *cold*, if we think of the qualificative function as meaning *on the whole*. Once the relationship is recognized, such specialized or differentially marked meanings as are confined to one or another word-class (so in átagua *to be on a drinking bout*, from áta *to drink*, or in héregu *difficult*, from hére *strong*) no longer bar identification.

Finally, I should like to take this opportunity of correcting what appears to be a faulty analysis in the ante-penultimate paragraph of the same section of my earlier paper. There can be no doubt (such as was expressed there) that tubárua *ahead of her*,

or *for herself*, should be analysed as: 34 + bára *before/for* + -gua (reflexive); Breton cites 'noubároua' from 'noúbara' as being analogous to 'nómacoua' from 'nóman', and to 'noáriocoua *ou* noárioua' from 'noária'. But although I still believe it correct to say that -árigiǫ *afterwards* results from -árigi *after or behind* + -giǫ ~ -geǫ (133.1) *out of, from,* or *by*, this directional suffix can have no place in such a form as bárigaų *to thy rear*, which is more simply and plausibly explained as: bárigi *behind thee* + -ų *to* (the other directional suffix, classed—erroneously, I now think—as 134.1), with change of morpheme-final /i/ to /a/ before -ų.[4] Similarly, the presence of 133.1 in tubáruagaų *to her front*, or *ahead of her* (reflexive), seems questionable, to say the least. A more plausible analysis appears to be: 34 + bara + -gua (reflexive) + -ų *to*. If this is correct, we must presume that the reduction of /g/ (as in tubárua, see above) is inhibited by the addition of -ų; but that the attraction of such analogous forms as anágaų *to the back, backward*, and bárigaų *to thy rear*, has brought about, from a hypothetically "regular" *tubáraguaų, metathesis of the second /a/ with /ua/. Another possible—though on the whole less likely—analysis would be: tubárua (< tubára + -gua) + -(u)ga (the generalizer, 113.1) + -ų *to*. In either case, the directional suffix -ų *to or towards* would be removed from the anomalous position AFTER its counterpart -giǫ ~ -geǫ (133.1), and reclassed WITH it as 133.2.

To summarize: middle-voice and stative have been disentangled and recognized as distinct though incompatible suffixes with different relative positions, 152.1 and 153.2 respectively; while convergence of functional and distributional criteria has led us to identify the latter with homophonous forms occurring with adjectives and with nouns, thus recognizing a triple distribution for this suffix. A similar identification has been made in the case of -gu (112.2), which functions as a qualifier with adjectives and as a collectivizer with nouns. Analogous identification of the now homophonous (in both alternants) middle-voice and passive suffixes does not seem possible, since they may occur with different functions in the same environment; so, middle-voice áigua (aig- + 151.9 + 152.1) *to fall* is a primary word, while áiga *to eat* underlies passive áigua (aig- + 151.9 + 152.2) *to be eaten*. They have been placed in the same positional subclass because, themselves incompatible, each occurs before one of two other incompatible suffixes, the tensive or the stative. It would perhaps have been more logical to re-organize the suffix-list so as to set apart all suffixes having a distribution with more than one word-class; but at this time I prefer to make as few changes as possible. Such suffixes as have been discussed here, and which have a VA, VAN, or AN distribution, are not to be confused with the 'polyvalent' suffixes (160), two of which are unique in that they occur with locators, while others such as 161.1 and 161.4 are more in the nature of enclitics. This latter class (160) remains unchanged. It will suffice here to employ the same índex-number for all distributions of the identified suffixes, and to indicate their several functions by using the old verbal labels.

110. Adjectival and adjectivalizing: 111. -habu (propensive); -goda (= 154; v. also under 113); -ua (= 152.2); 112. -gua (= 153.2); -gu (with qualificative function); 113. -(u)ga (generalizing); -goda (= 154; v. also under 111); -buri (= 134, with absolutive function).

120. Adverbializing (and doubtfully adverbial): 121. -ina (with meaning similar to that of the Spanish gerund).

130. Nominal and nominalizing: 131. -ni ~ -ne, -di, -li ~ -le, -ri, (131.1–131.4); -gole (131.5, instrumental); 158.7 occurs here as pluralizer with certain nouns denot-

[4] And was so explained by me in a paper to which I had not access at the time of writing that cited in footnote 1: Morphophonemics of Island Carib (IJAL 17. 224–234), second paragraph under section **2.4**.

ing animate beings; 132. -gua (= 153.2, with reflexive function); -gu (= 112.2, with collective function); -(u)ga (= 113.1); -bu *at*, -da *in*, -ha *at*, -rugu *in*, -uagu *upon*, (132.4–132.8, locational); 133. -giẹ ~ -geẹ (133.1, *out of/from, by way of*); -ụ (133.2, *to, towards*); directional; 134. -buri (with inclusive or multiplicative function).

140. Locator formatives and suffixes: 141. -ha, -ra, -gVta, -gVra, -te, -g(u)ia, (141.1–141.6, primary suffixes indicating position or degree of distance); 142. -į (non-demonstrative modifier of 141.1/2); either member of 133 may occur here with one sub-class of locators.

150. Verbal and verbalizing: 151. -ba ~ -b, -ca ~ -c, -da ~ -d, -ga ~ -g, -ha, -ma ~ -m, -na ~ -n, -ra ~ -r, -a ~ zero, (151.1–151.9, thematic-verb formatives); 152. -ua ~ -u (151.1, middle voice); -ua ~ -u (passive); 153. -ha (153.1, tensive); -gua (153.2, stative); and, non-productively, -ba ~ -b, -ca ~ -c, -da ~ -d, -ga ~ -g, with undefined functions, and perhaps identical with the homophonous suffixes of 151; 154. -goda ~ -god (causative); 155. -UnE ~ -U (participial); 156. -ba, -ią́, -ha ~ -a, -gi ~ -ge, -tI, (156.1–156.5, imperfective, progressive, perfective, durative, and aorist-agentive aspect-markers respectively); 113.1 or 152.2 may occur here, but only as word-final after 155; 157. -dI, -lI ~ -r, (157.1–157.2, copulas); 158. -na, -bu, -i, -u ~ -ụ, -ua, -o-ią ~ -iụ ~ -nu, (158.1–158.7, person marker suffixes).

VERB INFLECTIONS IN WAIWAI (CARIB)

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The Unevangelized Fields Mission

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0. In Waiwai,[1] verbs constitute a well defined distribution class distinct from other word classes. Verb stems are defined as those stems which may occur with the affixes herein discussed: i.e. those marking tense, mode, motion, subject, and the like. They differ from noun stems, which are defined as those that never occur with affixes of mode or motion nor with subject indicators and which occur with different affixes of tense than those which accompany verb stems. Verb stems also differ from modifier stems, which are defined as those that never occur with affixes of tense, mode, or motion nor with subject indicators.

Verb stems are divided into two major classes: transitive and intransitive, distinguished morphologically on the basis of the first person subject prefix with which they occur. Transitive stems occur with prefix 31, intransitive stems with prefix 41. (For further discussion of these prefixes see under **2.3.**)

1. Verb morphophonemics.[2] A brief statement of verb morphophonemics is given for the sake of economy in stating allomorphic alternation. Allomorphs whose occurrence is according to the following morphophonemic principles are not listed in the description of the morphemes. Forms of morphemes listed in this paper are considered to be the basic forms.

1.1 Vowel loss. Unstable vowels are ï and u in all of their occurrences, and i when it follows an alveopalatal consonant. An unstable vowel is lost from a word initial syllable when it occurs between k and a morpheme beginning with a nonsibilant continuant: √kï-[3] (prefix 41) + √mata

[1] Waiwai is a member of the Carib linguistic family and is spoken along the upper Essequibo River in British Guiana and along the upper Mapuera River in Brazil. There are about 150 speakers. Field work was done in periods of three, four, and seven months respectively in 1949, 1950, and 1951. The authors worked together very closely in all the investigation. However, Neill Hawkins concentrated largely on the phonemic analysis; section **1** of this paper is largely a result of his study. Robert Hawkins did most of the analysis of the verb morphology. The authors wish to express their appreciation to Viola Waterhouse and other members of the staff of the Summer Institute of Linguistics at the University of Oklahoma for their help in organizing the data.

[2] The phonemes of Waiwai are: high vowels i, ï, u; low vowels e, o, a; acute consonants t, s, š, č, n, ñ, r (alveolar flap), ř (alveopalatal flap), y; grave consonants k, h, m, p (fricative), w; and the nonlinear phoneme of stress (ˊ). See W. Neill Hawkins, A Fonologia da Língua Uáiuái (Universidade de São Paulo, Boletim 157, Etnografia e Tupi-guarani 25; São Paulo 1952, pp. 49.)

[3] The following symbols are used with the values here indicated: √ is read 'morpheme' or 'allomorph'; ∼ marks allomorphic alternation that is phonologically defineable; ∞ marks allomorphic alternation that is not phonologically defineable or is only partially so.

(verb stem) + √-0 (suffix 142) > kmatá *I got wet*; kï- (prefix 41) + √wato (verb stem) + √-0 (suffix 142) > kwató *I passed by it*; √kï- (prefix 33) + √pohči (verb stem) + √-u (suffix 142) > kpohčíw *I missed you.* An unstable vowel is also lost from a word initial syllable when it occurs before a vowel-initial morpheme: √wï- (prefix 31) + √ahka (verb stem) + √-0 (suffix 142) > wahká *I broke it*; √tï- (prefix 42) + √ama (verb stem) + √-0 (suffix 142) > tamá *we cut it down*; √nï- (prefix 44) + √ono (verb stem) + √-0 (suffix 142) > nonó *he ate (meat)*; √kï- (prefix 41) + √ečema (verb stem) + √-0 (suffix 142) > kečemá *I sat down.*

An unstable vowel is lost from a word medial syllable under any of five types of environments: (1) Between an unclustered acute consonant and an unclustered grave consonant in either order: √ekposï (verb stem) + √-ko (suffix 155) > ekposkó *spin it (thread)*; √a (base)[4] + √-rï (suffix 111) + √-ko (suffix 155) > arkó *carry it*; √nï- (prefix 44) + √eši (verb stem) + √-pe (suffix 154) > ñešpé *leave it (there)*; √tïtï- (prefix 42) + √wato (verb stem) + √-0 (suffix 142) > tïtwató *we passed by it*; √kï- (prefix 41) + √kokmamï (verb stem) + √-sï (suffix 154) > kïkokmamsï *it is expected that I spend the night.* (2) Between two unclustered grave consonants: √nï- (prefix 44) + √awomu (verb stem) + √-pe (suffix 154) > nawompé *he is expected to arise*; √nï- (prefix 44) + √ekï (verb stem) + √-pe (suffix 154) > ñekpé *he is expected to bring it.* (3) Between n and a morpheme beginning with unclustered t, s, č, or y: √enï (verb stem) + √-ta (suffix 147) > entá *go see*; √wï- (prefix 31) + √enï (verb stem) + √-sï (suffix 154) > wensï *it is expected that I see it*; √nï- (prefix 44) + √enï (verb stem) + √-čow (suffix 143) > ñenčów *they all saw it*; √mï- (prefix 43) + √enï (verb stem) + √-ya (suffix 141) > meñyá *do you see it?.* (4) Between unclustered r, s, š, č, or t and y: √wï- (prefix 31) + √a (base) + √-rï (suffix 111) + √-ya (suffix 141) > wařyá *shall I carry it?*; √mï- (prefix 43) + √ekposï (verb stem) + √-ya (suffix 141) > mekposá *are you spinning (thread)?.* √oy- (prefix 32) + √amokraši (verb stem) + √-ya (suffix 141) > oyamokrašyá *it might put a splinter in my hand*; √kï- (prefix 41) + √emici (verb stem) + √-ye (suffix 144) > kemicyé *I dived*; √nï- (prefix 44) + √enatï (verb stem) + √-ya (suffix 141) > ñenačyá *it is about to be finished.* (5) Before the -o allomorph of suffix 142: √mï- (prefix 43) + √anïmï (verb stem) + √-o (suffix 142) > manmó *did you raise it?*; √nï- (prefix 44) + √aponuku (verb stem) + √-o (suffix 142) > naponkó *he asked for it.*

An unstable vowel is lost from the basic form of a morpheme when it occurs unstressed[5] in word final position after an unclustered nasal consonant: √nï- (prefix 44) + √awomu (verb stem) + √-0 (suffix 142) > nawóm *he arose*; √nï- (prefix 44) + √ewomï (verb stem) + √-0 (suffix 142) > ñewóm *he entered.*

1.2. Harmonizing of ï. ï in the basic form of a morpheme is replaced by u before a syllable containing u or in a syllable after u. It is replaced by i before a syllable containing i unless a consonant cluster other than h plus consonant intervenes. ï may remain or be replaced by i in free alternation when word final in the stem añikï *to call.* Examples: √mï- (prefix 43) + √añikï (verb stem) + √-0 (suffix 142) > mañkï *did you call?*; √mï- (prefix 43) + √pu (base) + √-rï (suffix 111) + √-0 (suffix 142) > mupurú *did you roast it?*; √kï- (prefix 41) + √wuñu (base) + √-0 (suffix 115) + √-wa (suffix 141) > kuwuñwá *I am lazy*; √yï- (prefix 11) + √mi (verb stem) + √-ko (suffix 155) > yimikó *tie it*; √wï- (prefix 31) + √hšikï (verb stem) + √-0 (suffix 142) > wihšikï

[4] The definition of the term 'base' is given in **3**.

[5] Further study is needed before the occurrence of stress may be described.

I dragged it. Compare √nï- (prefix 44) + √mši (base) √-ta (suffix 113) + √-0 (suffix 142) > nïmšitá *she had a child.*

1.3. Palatalization. t, r, and n in the basic form of a morpheme are replaced by č, ř, and ñ respectively when they occur before front vowels or y: √tï- (prefix 11) + √i (base) + √-rï (suffix 111) + √-ko (suffix 155) > čirkó *put it down*; √tïtï- (prefix 42) + √i (base) + √-rï (suffix 111) + √-ya (suffix 141) > čičiřyá *shall we put it down?*; √0- (prefix 31) + √potu (verb stem) + √-ya (suffix 141) > počyá *shall I pick it?*; √nï- (prefix 44) + √enï (verb stem) + √-ye (suffix 144) > ñeñyé *he saw it.*

1.4. Loss of y. y in the basic form of a morpheme is lost following s: √mï- (prefix 43) + √ekposï (verb stem) + √-ya (suffix 141) > mekposá *are you spinning (thread)?*; √kï- (prefix 41) + √ehsï (verb stem) + √-ya (suffix 141) + √-sï (suffix 151) > kehsásï *I inhale.*

1.5. Reduction to h and loss of h. k is replaced by h before a morpheme beginning with t, k, s, or č.[6] p is replaced by h before a morpheme beginning with a consonant. The h, however, which replaces p in the stem esemañipu *to play* and in √-nopu (suffix 121) may either remain or be lost in free alternation. In all other occurrences of this replacive h or of any other h when it is preceded in the word by more than two syllables, by a vowel cluster, or by a word medial consonant cluster, the h is lost. Examples: √ekï (verb stem) + √-ta (suffix 147) > ehtá *go bring it*; √momoku (verb stem) + √-ko (suffix 155) > momohkó *wait for it*; √wï- (prefix 31) + √amekï (verb stem) + √-sï (suffix 154) > wamehsï *it is expected that I pick it up*; √mï- (prefix 43) + √añikï (verb stem) + √-čow (suffix 143) > mañihčów *did you all call them?*; √wï- (prefix 31) + √apu (verb stem) + √-ya (suffix 141) > wahyá *shall I eat it (vegetables)?*; √apomřikï (verb stem) + √-ko (suffix 155) > apomřikó *whirl it*; √eemipu (verb stem) + √-ko (suffix 155) > eemikó *patch it*; √mï- (prefix 43) + √potu (verb stem) + √-hka (suffix 131) + √-y (suffix 144) > mïpotukáy *did you stop picking?*; √wï- (prefix 31) + √amno (base) + √-nopu (suffix 121) + √-ya (suffix 141) + √-sï (suffix 151) > wamnonohyásï ∞ wamnonoyásï *I am making lumps*; √kï- (prefix 41) + √es- (prefix 21) + √emañipu (verb stem) + √-ya (suffix 141) + √-sï (suffix 151) > kesemañihyásï ∞ kesemañyásï *I am playing.*

1.6. Reduction of i and u to semivowels. When a cluster of vowel plus i occurs in the basic form of a morpheme, the i is replaced by y when it occurs unstressed either word final or before phonemes other than t, s, or č. When a cluster of vowel plus u occurs in the basic form of a morpheme, the u is replaced by w when it occurs unstressed unless it is followed by a consonant cluster. Examples: √ai (verb stem) + √-ko (suffix 155) > aykó *bake it*; √ai (verb stem) + √-ta (suffix 147) > aitá *go bake it*; √wï- (prefix 31) + √ei (verb stem) + √sï (suffix 154) > weisï *I am expected to scold him*; √mï- (prefix 43) + √ei (verb stem) + √-čow (suffix 143) > meičów *you all scolded him*; √wï- (prefix 31) + √ei (verb stem) + √-0 (suffix 142) > weï *I scolded him*; √wï- (prefix 31) + √ou (verb stem) + √-0 (suffix 142) > woú *I took it out*; √wï- (prefix 31) + √ou (verb stem) + √-ya (suffix 141) > wowyá *shall I take it out?*; √tï- (prefix 11) + √ou (verb stem) + √-hka (suffix 131) + √kï (suffix 155) > touhkakï *stop taking it out*; √wï- (prefix 31) + √mi (verb stem) + √-u (suffix 142) > wimiú *I tied it*; √kï- (prefix 41) + √ewře (verb stem) + √-u (suffix 142) > kewřéw *I laughed.*

[6] In the following two forms in which k occurs before a morpheme beginning with k, h does not replace the former k but the geminate cluster is reduced to one k: √ekï (verb stem) + √-ko (suffix 155) > ekó *bring it*; √a- (prefix 22) + √moku (verb stem) + √-ko (suffix 155) > amokó *come.*

2. Prefixes are arranged in the following numerical groups: group 10 indicating stem class differentiation, group 20 indicating mode or voice, and groups 30 and 40 indicating person referents. Prefixes of groups 10–30 are mutually exclusive and occur directly preceding the stem. Prefixes of group 40 may precede the stem or prefix 21.

2.1. Group 10 includes only prefix 11 √yī- ∞ √tī-, which differentiates two classes of stems A and B. It precedes class A stems when no other prefix occurs, and precedes the stem √wo *to shoot* when it occurs with prefix 31. Class B stems never occur with this prefix. The allomorph √yī- occurs with stems of a subclass A_1 which includes both transitive and intransitive stems; √tī- occurs with stems of a subclass A_2 all of which are transitive. A_1 is the regular pattern, consisting of all class A stems not listed as A_2. Class A_2 consists of ten stems: irī (base + suffix 111) *to put down*, √ikī *to grate*, √mī *to give*, √nomī *to leave*, √pī *to bathe* (transitive), √oku *to eat* (*bread*), √ono *to eat* (*meat*), √ou *to take out*, √wo *to shoot*, √yo *to boil*. Examples of prefix 11 with A_1 stems: yīhkotóko *cut it in two*, yīrīmečóko *everyone set it down*, yuputá *go roast it*, yipikakī *peel it*, yīwīnīkřekó *put him to sleep*. Examples of prefix 11 with A_2 stems: čirkó *put it down*, čihkó *grate it*, tīmkó *give it*, tīnomkó *leave it*, tīhkó *bathe him*, tohkó *eat it* (*bread*), tonokó *eat it* (*meat*), toutá *go take it out*, twokó *shoot it*, tīyokó *boil it*. Prefix 11 is regularly lost when other prefixes occur. Examples: wīmhokésī *I am untying it*, mupuřyá *will you roast it?*, mīwé *you can shoot*, ahná čičiřyá *where shall we put it?*, awīnkó *go to sleep*.

2.2. Group 20 includes prefixes 21 and 22.

Prefix 21 √es- ~ √eš- ~ √eč- ~ √et- ~ √e- indicates non-active voice. It may be translated into English by either the passive, reflexive, or reciprocal voice. This prefix occurs only before transitive stems and the resultant form is intransitive. Allomorphic alternation is as follows: √es- occurs before e followed by a consonant other than š or č; √eš- before eš; √eč- before a vowel plus č; √et- before a-initial stems and stems of class A; √e- before all other consonant-initial stems.[7] Examples: kesehčemésī *I treat myself*, kešešewnukyásī *I am choking myself*, ečečetóko *steady yourself*, ñečočoronká *his fever left*, ketaknamésī *I turn myself around*, ñekorokésī *he washes himself*, yupunú ñetoñésī yamoró *the meat is eaten slowly*, ñeseyáše *they are scolding each other*.

Prefix 22 √e- ∞ √a- ∞ √0- indicates imperative mode. √e- occurs before the stem alternant √to of the verb *to go*; √a- with other intransitive stems which begin with a consonant; √0- before all other stems. Examples: etokó *go*, apakakī *wake up*, amokó *come*, awīnkó *go to sleep*, atītmamkó *stop*, eřemakī *be seated*, mohkakī *pull it out*.

2.3. Prefixes of groups 30 and 40 are person referents. There is a more extensive set of prefixes for first person referents than for any other person. Note also that first and second person objects are indicated separately (by prefixes 32 and 34) when the subject is third person, but in all other instances are combined with the subject in a single prefix (33). Third person object is indicated by a free form or left unmarked.

Prefix 31 √wī- ∞ √0- indicates first person singular subject with transitive verbs.[8] √wī- occurs with all vowel-initial stems, all stems of class A, and the stem allomorph √š of the verb *to be*. It also occurs with the stem allomorph √ka of

[7] √et- and √e- occur in free alternation before two stems of class A: √wīnīkī *to go to sleep* and √hkoto *to cut in two*. Examples: kewīnīkyásī ∞ ketwīnīkyásī *I am nodding, about to go to sleep*; ñehkočé ∞ ñetīhkočé *it is about to be cut in two*.

[8] This prefix was chosen above in the introduction as the criterion for transitiveness and in an exhaustive paper all the transitive stems of the language would be listed here.

the verb *to do* or *say* when the stem plus its suffixes constitute only one syllable; otherwise, √0- occurs with this stem, and √0- occurs with all other stems. Examples: wetapá *I hit it*, wačkoroká *I washed dishes*, wïhtïnoyásï *I know it*, wimiyá *shall I tie it?*, tanï wïšákñe *I was here*, ahčé wïké *what shall I say?*, ahtï késï *which one?, I say*, mohkésï *I will pull it out*, parašká *I stabbed it.*

Prefix 32 √oy- ~ √o- indicates first person singular object with transitive verbs in the indicative mode.[9] √oy- occurs before vowels, √o- before consonants: oyetapá *it hit me*, oyařmé *he is about to throw me*, oparašká *he stabbed me*, ohyásï *he will bathe me.*

Prefix 33 √kï- occurs only with transitive verbs. It seems to have the basic meaning of *you and I involved in an action.* Thus it may mean first person subject plus second person object, or first person object plus second person subject, or first person inclusive object: kenwó *I saw you, you saw me*, or *he saw us* (inc.);[10] amoró ow keyásï *you will scold me*; keñyáše so *I will see you all, you will see us* (inc.) *all*, or *he will see us* (inc.) *all*; kïkorokésï *I wash you, you wash me*, or *he washes us* (inc.).

Prefix 34 √aw- ~ √a- indicates second person object with transitive verbs. √aw- occurs before vowels, √a- before consonants: aweñyá *he may see you*, awařyá *he may carry you*, amiyásï *he will tie you*, aparašká *he stabbed you.*

Prefix 41 √kï- indicates first person singular subject with intransitive verbs. (We note here that the verb *to go* has stem allomorphs (√wto ∞ √wtom) occurring after prefix 41 and (√to ∞ √tom) occurring after other prefixes.[11] For further description of the allomorphic alternation of this verb see **2.**) Examples: kïwčésï *I am going*, kïwtómo *I went*, keřemésï *I will sit down*, kwató *I passed by it*, katonásï *I am coughing*, kmačésï *I will get wet*, kïtatanásï *I am trembling.*

Prefix 42 √tï- ∞ √tïtï- indicates first person inclusive subject with both transitive and intransitive verbs. √tï- occurs before vowels; it also occurs in free alternation with √tïtï- before stems of class A and the verb *to go*; √tïtï- occurs in all other cases. The stem of the verb *to drag* has two allomorphs occurring in free alternation after this prefix: √hšikï ∞ √šišikï. Examples: čihšikyásï čišišikyásï *we* (inc.) *will drag it*, tařyásï *we* (inc.) *are carrying it*, česeřesmésï *we* (inc.) *will eat*, ahná četakřiyá *where shall we* (inc.) *rest?*, tïtïhtïnoyásï ∞ tïhtïnoyásï *we* (inc.) *know it*, tïtïhčamnoyásï ∞ tïhčamnoyásï *we* (inc.) *will forget*, tïtïhčé ∞ tïhčé *shall we* (inc.) *go?*, tïtwačé *shall we* (inc.) *pass by?*, tïtmohká *we* (inc.) *pulled it up.*

Prefix 43 √mï- indicates second person subject with either transitive or intransitive verbs. Examples: mïmokyá *are you coming?*, mïčé *are you going?*, áhče póko máy *what are you doing?*, mesenčétu *will you listen to each other?*, meñyásï *you will see.*

Prefix 44 √nï- ∞ √0- indicates third person subject and occurs with intransitive verbs and with transitive verbs which have no object prefix. √nï- occurs before vowels and stems of class A, and before the stem of the verb *to do* or *say* when the stem plus its suffix constitute only one syllable. √nï- also occurs in free alternation with √0- with the verb *to go* when the stem plus

[9] The free forms of personal pronouns occur with verbs in the imperative mode. Examples: ów ewahtóko *tie up my hammock*, ów arkó *carry me*, noró anihkó *call him.*

[10] The inclusiveness or exclusiveness of pronominal prefixes or pronouns is indicated in the English translations only in the paragraphs which describe the inclusive pronominal prefixes and the exclusive personal pronoun.

[11] With all nominalizing suffixes the stem of the verb *to go* has one of the two allomorphs √to ∞ √wto. √wto occurs after first and second person possessive prefixes and √to occurs elsewhere: owto šé wasï *I want to go*, awtor mé *when you go*, kïwtotópo *our trip*, tïto šé nay *he wants to go*, tórï wenwó *I saw him go.*

its suffix constitute only one syllable. √0- occurs in all other cases. Examples: ñeseyká wehtó *the fire went out*, nakékñe kanawá *he hollowed out a canoe*, nīmtapowá *he is talking*, noñétu *they all may eat it*, kīwčésī nīká *I'm going, he said*, kanawá nīčé ∞ čé *the canoe is going*, kamehčésī *he puts on firewood*, metunákñe *it cooed*. Verbs with prefix 44 also occur accompanied by the first person plural exclusive pronoun amná. In such cases the verb is translated as having a first person plural exclusive subject; the third person partial of the subject referent is carried by the prefix and the first person partial by the free pronoun: amná késī *we* (exc.) *say it*, ñepīrká amná *we* (exc.) *fell*, amná nařmá *we* (exc.) *threw it*, amná césī orotó *we* (exc.) *are going now*.

3. Since variation of certain suffixal allomorphs is governed by various classes of verb stems, we give a short statement of verb stem classes before describing suffixes as such.

The stems of some verbs are not morphologically divisible and are designated class 1 stems; stems of all other verbs consist of bases plus stem formative suffixes and are designated class 2 stems. Each of the stem formative suffixes occurs with a unique base or group of bases, thus forming subclasses designated 2A through 2G (described below).

Stems of class 1 having more than one allomorph are those for *to be*, *to see*, *to say* or *do*, and *to go*; other class 1 stems have unique allomorphs. The verb stem *to be* has the following allomorphs: √eši ∞ √š ∞ √es ∞ √eh ∞ √0. √eši occurs before suffixes 121, 131, 142, 144, and 154; √š before the combination (141 ± 153 +161); √es before 155; √eh before 143, 145, and 146; and √0 before 141 alone, (141 + 151), and (141 + 153). Examples: enhīrá weší orotó *I did not see it just now*, enhīrá wešíy kokoñéro *I did not see it yesterday*, kešponké *will I die?*, itó ñešpé *let it stay there*, pahšá mokuhrá šákñe *long ago he didn't come*, tuná chew šatkéñe *they were all in the rain*, kařpé eskó *be strong*, tán mehčów *you all were here*, tán čehčé *we all were here*, tán ehčóko *everyone stay here*, áhče póko wáy *what shall I do?*, áhče póko nátu *what are they all doing?*, yīhtīnopīrá wasí *I don't know*.

The verb stem *to see* has two allomorphs: √enī ∞ √enw. √enw occurs before suffix 142; √enī before all other suffixes: menwó *did you see it?*, wenwó *I saw it*, čeñyásī *we will see it*, ñeñyé *he saw it*, enīhkakī *stop looking*, enkó *look*.

The verb stem *to say* or *do* has three allomorphs: √ka ∞ (√kas ∞ √kah). √kas and √kah alternate freely before suffix 155; √ka occurs before all other suffixes: ahčé nīká *what did he say?*, čisúsu kékñe *Jesus said*, kaskó *say it*, noró kahkī *he will have to say*.

The verb *to go* has four stem allomorphs, (√to ∞ √wto) ∞ (√tom ∞ √wtom), here described according to occurrence with various suffixes. (For further description of the alternation of these allomorphs see **2.3**, prefix 41.) Allomorphs within the latter parenthesis occur before suffix 142 and the -pe allomorph of 154; allomorphs within the former parenthesis occur before -sī allomorph of 154 and before all other suffixes: kīwtómo *I went*, mītómo *you went*, ahaří ka tompé *wait until it has gone*, mīčé *are you going?*, ahaří ka kīwtósī *wait until I go*, mīkyám točów *they all went*, kīwtóy *I went*.

Other stems of class 1 have unique allomorphs. Examples: √aywa *to sweep*: waywésī *I am sweeping*, naywačów *they all swept*, aywakī *sweep*, ahaří ka naywápe *wait until he sweeps*; √ašikwo *to break in two*: ñetašikwé *it is about to break in two*, ašikwóko *break it in two*, mašikwočów *you all broke it in two*, ašikwopīnkakī *stop breaking it in two*; √ewře *to laugh*: kewřésī *I am laughing*, ñewřečé *they all laughed*, ewřekó *laugh*; √apikī *to step on*: kapikyásī *I will step on you*, apihkó *step on it*, napihčów *they all stepped on it*; √emčapu *to yawn*: kemčápu *I yawned*, memčáya *are you*

yawning?, ahaří ka ñemčápe *wait until he yawns.*

4. Suffixes are arranged in decades from 110 through 170 according to their relative positions in the verb. Group 110 are certain of the stem formative suffixes.[12] Suffixes of groups 120–170 indicate type of action, tense, and mode. Suffixes of groups 120–140 occur after suffixes of any one previous group or after stems of class 1. Suffix 155 occurs after suffixes 143, 131, 121, those of group 110, or stems of class 1. (Suffixes 131, 121, and those of group 110 will for convenience hereafter be called suffixes of set I.) Other suffixes of group 150 occur after those of group 140. Suffix 161 occurs after 153 or 141. Suffix 162 occurs after 148, set I, or stems of class 1. Suffix 171 occurs after 162, set I, or stems of class 1.

4.1. Suffixes of group 110.

Suffix 111 √-rï ∞ √-0 stem formative of class 2A stems. √-0 occurs when the stem is followed by √-sï of suffix 154, suffixes 146, 145, 146, and 147; √-rï occurs before all other suffixes. Bases of class 2A stems include: √a *to carry*, √i *to put down*, √epo *to look for*, √e *to drink*, √pu *to roast.* Examples with √-rï: ñerî *he drank it*, wiřyásï *I will put it down*, wupurú *I roasted it*, arkó *carry it.* Examples with √-0: ahaří ka wasî *wait until I carry it*, mičów *you all put it down*, načé *they all carried it*, čičóko *everyone put it down*, epotá *go look for it.*

Suffix 112 √-nïm ∞ √-nm ∞ √-m ∞ √-0 stem formative of class 2B stems. √-nm occurs before suffix 142 with all class 2B stems other than √ahro *to jump*; with this one stem it alternates freely with √-m before suffix 142: mahronmó ∞ mahróm *you jumped.* Allomorph √-0 most commonly occurs before suffix 141 but it may occur in free alternation with √-nïm and √-m before this suffix also.[13] √-nïm and √-m occur in free alternation before all other suffixes. Bases of class 2B stems include: √ači *to sneeze*, √ahro *to jump*, √ai *to be hot (pepper)*, √ame *to refuse to give*, √apepe *to be breezy*, √ařï *to fly*, √ato *to cough*, √awsï *to be heavy*, √emkotu *to grunt*, √komsï *to be cold (person)*, √čoko *to hiccough*, √ma *to dance*, √maya *to be wild*, √metu *to coo*, √peře *to swim*, √tata *to tremble*, √roma *to be hungry*, √rïwo *to be angry*, √we *to be drunk.* Examples: kačinmó *I sneezed*, nařinmó *he flew*, mayanmó poñkó *the pigs were wild*, kromanásï *I am hungry*, kïkomsïnásï *I am cold*, nahronïmyátu ∞ nahromyátu ∞ nahronátu *they all are about to jump*, ahronïmkó ∞ ahromkó *jump*, nahronïmye ∞ nahromyé *he jumped*, ahronïmtá ∞ ahromtá *go jump*, ahaří ka nahronïmpé ∞ nahrompé *wait until he jumps.*

Suffix 113 √-ta ∞ √-tïm ∞ √-0 stem formative of classes 2C, 2D, and 2E. √-0 occurs with all bases of these classes before suffix 141 and with all bases of these classes other than √mtapo *to talk* and √kroku *to drip* before suffix 121; √-ta occurs with these two bases before suffix 121. Before other suffixes √-ta occurs with stems of class 2C and √-tïm occurs with stems of class 2D. Both √-ta and √-tïm occur with class 2E, √-ta before suffix 121 and √-tïm before other suffixes.

The bases of class 2C stems include: √ak *to spit*, √apoyorur *to buzz*, √atïk *to sprout*, √čemaron *to tell a lie*, √mašmi *to be satiated*, √očoron *to have fever*, √kowon *to howl*, √mtapo *to talk*, √pepeyu *to glitter*, √peramuk *to sweat*, √pišišin *to wave (water)*, √poyen *to be sick*, √puruku *to swell up*, √tupen *to duck the head.* Examples: natïkwá

[12] Stem formative suffixes belong to the derivational layer of formation rather than the inflectional layer, but five of such suffixes are described in this paper on inflection because each has allomorphs varying according to the suffixes which follow. This variation may be termed inflection of the derivational layer. Other verb stem formative suffixes are omitted from this paper as each has only one allomorph.

[13] Compare the non-verbal forms oromanïmyátaw ∞ oromamyátaw ∞ oromanátaw *while I was hungry.*

it is sprouting, kmašmiwásï *I will be satiated*, peramkwásï *he is sweating*, kperamtáy *I sweated*, mïperamtačów *you all sweated*, nupurukwá *it is swelling up*, ahaří ka nupurutápe *wait until it swells up*.

The bases of class 2D stems include: √kok *to crow* and √eras ∞ √erah *to be afraid*. √eras occurs before √-0 and before suffix 121; √erah before √-tïm. Examples: porotó kokwásï *the spider monkey is crowing*, kyakwé kohtïmye *the toucan crowed*, meraswatkéñe *you all were afraid*, keraspésï *I scare you*, nerahtïmye *he was afraid*.

Class 2E consists of one stem, the base of which is √kroku *to drip*: nïkrokwá *it is dripping*, nïkrotanmekï *he made it drip*, ahaří ka nïkrotïmpé *wait until it drips*.

Suffix 114 √-wïm ∞ √-pam ∞ √-0 occurs as stem formative with the one stem which constitutes class 2F. The base of this stem is √eře *to hurt*. √-0 occurs before suffixes 121 and 141; √-wïm and √-pam seem to alternate freely before other suffixes. Following are the examples thus far recorded: ñeřewïmye ∞ ñeřepámye *it was hurting*, ñeřewïmčów *they all hurt*, ñeřepamčé *they all hurt*, eřepamkó *it will surely hurt you*, ñeřewá *it hurts*.

Suffix 115 √-rum ∞ √-0 occurs as stem formative with the one stem which constitutes class 2G. The base of this stem is √wuñu *to be lazy*. √-0 occurs before suffixes 121 and 141; √-rum elsewhere: kuwuñwásï *I am lazy*, wuwuñuřéw *I made him lazy*, ahaří ka nuwuñurumpé *wait until he is lazy*, awuñurumčóko *everyone be lazy*.

4.2. Suffixes of groups 120–170 indicate type of action, tense, and mode.

Suffix 121 √-po ∞ √-nmekï ∞ √-mekï ∞ √-nopu ∞ √-nohka ∞ √-ře ∞ √-pe indicates caused or permitted action. √-po occurs after the stems of transitive verbs: ñesenpésï *it can be seen* (*it makes itself seen*), arpóko *send it* (*cause it to be carried*), ekpóko *send it* (*cause it to be brought*), ketwïnïkpó *I let myself be put to sleep*, ketmípo *I let myself be tied*.

The other allomorphs of 121 occur after intransitive stems but the resultant form is transitive. √-nmekï occurs with the following stems: ači (√ači + √-0 and likewise for other two-morpheme stems listed below) *to sneeze*, ahro *to jump*, ame *to refuse to give*, √awomu *to arise*, √amahči *to run*, krota *to drip*. Examples: kačinmekyásï *it makes us sneeze*, wahronmekï *I made him jump*, mamenmekyé *did you cause him not to give it?*, ñemahčinmekyásï *he is chasing them*, wïkrotanmekï *I made it drip*. √-nmekï and √-ře occur in free alternation after the stems atïk *to sprout*, peramuk *to sweat*, roma *to be hungry*, tata *to tremble*. Examples: watïkřéw watïhtanmekï *I allowed it to sprout*, kamó peramukřésï peramtanmekyásï *the sun makes him sweat*, wïromařéw ∞ wïromanmekï *I made him hungry*, tatařéw ∞ tatanmekï *it made him tremble*. √-ře occurs following √-nmekï with the three stems ma *to dance*, we *to be drunk*, and eñepa *to steal*. Examples: manmekřéw *it made him dance*, wenmekřéw *it made him drunk*, weñepanmekřéw *I made him steal*. √-mekï occurs with the one stem √ewře *to laugh*: kewřemekyásï *you make me laugh*. √-ře occurs as the sole causative indicator with the stems √enuku *to boil* (intrans.), mašmi *to be satiated*, mtapota *to talk*, puruku *to swell up*, √wïnïkï *to fall asleep*, wuñu *to be lazy*. Examples: enukřekó *boil it*, mašmiřéw *it made him satiated*, yïmtapotařekó *read it* (*make it talk*), nupurukřéw *it made it swell*, nïwïnïkřésï *he puts him to sleep*, wuwuñuřéw *I made him lazy*. √-nopu occurs with the stems √ewomï *to enter*, √hyapamï *to be ashamed*, √kokmamï *to be past sunset*, √tïtmamï *to stop*. Examples: wewomnoyásï *I will drive them in*, wïhyapamnosï *I expect to make him ashamed*, tuná kokmamnohyá *it will probably rain past sunset*, wïtïtmamnópu *I stopped it*. √-nohka occurs with the two stems √enoři *to sink* and √ewru *to be born*. Examples: enořinohkakï *duck him*, ñewrunohkésï *she lets him be born*. √-pe occurs with the stems ain *to be hot* (*pepper*), eras *to be afraid*, eře *to hurt*, koto *to have an odor*. Examples: wainpésï *I make it hot* (*with*

pepper), keraspésï *I will scare you*, ñeseřepésï *it makes itself hurt*, kotopéw *it made it have an odor*.

Suffix 131 √-hka ∞ √-pinka indicates cessation of action. √-pinka occurs with the stems √ahsï *to catch*, √ašikwo *to break in two*, √enï *to see*, √eši *to be*, √ewsï *to swing*; √-hka occurs with all other stems. Examples: nahsïpïnká *he let go of it*, ašikwopïnkakï *stop breaking it in two*, ñesenpïnké *it goes out of sight*, kešpïnkésï *I will die*, ewsïpïnkakï *stop swinging it*, touhkakï *stop taking it out*, potuhkáy *he stopped picking it*, epatakakakï *stop coming out*.

Suffix 141 √-ya ∞ √-na ∞ √-wa ∞ √-/e ← V/ ∞ (√-ai ∼ √-a) ∞ √-0 indicates potentially real action.[14] It occurs following suffixes of set I or stems of class 1. It occurs word final or followed by suffixes 151, 152, 153, or 161. √-na occurs after suffix 112; √-wa after suffixes 113, 114, and 115; the replacive allomorph -e (represented by the symbol -/e ← V/) after all stems of class 1 which end with a or o, after all allomorphs of suffix 121 which end with a or o, and after suffix 131; √-ai and √-a occur with the verb *to be* (√-ai word finally and √-a word medially); √-0 occurs with stems of class 1 ending with e and having more than three linear phonemes; √-0 also occurs after allomorphs -ře and -pe of suffix 121. √-ya occurs in all cases not cited above. Examples: mïkyám manáše *they all are dancing*, nïmtapowásï *he is talking*, ñeřewá *it hurts*, ahná keřemé *where shall I be seated?*, wačésï *he will cross over*, ñenpésï *he is showing it*, nahsïpïnké *he is about to let it go*, áhče póko táy *what shall we do?*, náy karmošápu *there is some porridge*, yiší wasï *I want it*, yiší šákñe *he wanted it*, nïmtapotařésï *he reads it*, kewřésï *I am laughing*, aratïn mečeyá *will you play your instrument?*, mokyátu *they all are coming*, wenkayásï *I will put it in*.

Suffix 142 √-o ∞ √-u ∞ √-0 indicates immediate past tense (abbreviated i.p.)[15] non-collective action. It occurs word finally after suffixes of set I or stems of class 1. √-o occurs after the following stems of class 1: √tom ∞ √wtom *to go* (stem allomorphs), √enw *to see* (stem allomorph), √anïmï *to raise*, √nïmï *to endure pain*, √aponuku *to ask for*, √moku *to come*, and √wïnïkï *to fall asleep*; √-o also occurs after all stems of class 2B other than the stem ahro *to jump* after which √-o occurs in free alternation with √-0. √-u occurs after stems of class 1 which end with e or i though in rare cases √-u may occur in free alternation with √-0 after these stems; √-0 occurs in all cases other than those mentioned above. Examples: kïwtómo *I went* (i.p.), tomó *he went* (i.p.), manmó *did you raise it* (i.p.)*?*, waponkó *I asked for it* (i.p.), mïmokó *did you come* (i.p.)*?*, kïwïnkó *I fell asleep* (i.p.), nawsïnmó *it got heavy* (i.p.), nahróm ∞ nahronmó *he jumped* (i.p.), kewřéw *I laughed* (i.p.), wimiú *I tied it* (i.p.), kemičíw ∞ kemičí *I dived* (i.p.), wahká *I broke it* (i.p.), nïwratá *he cried* (i.p.).

Suffix 143 √-čow indicates immediate past tense collective action. It is mutually exclusive with and occurs in the same position as suffix 142: ñemahčičów *they all ran* (i.p.), mïwïnčów *you all fell asleep*

[14] This suffix occurs with suffix 161 referring to action in distant past time. Perhaps it is because actions that have occurred in the distant past are less certain to the Waiwai mind than more recent actions that the suffix of potentially real action occurs with this tense. Suffix 141 occurs word finally in statements of possibility or probability in present or future time and in questions of present or future time. It also occurs followed by suffixes 151 or 152 in affirmations of present or future time. Suffix 141 occurs with the nonverbal form of conditioning or contemporary action (verb stem + suffix 141 + -taw). This form may be translated *if* or *while it will be done*, *if* or *while it is being done*, or *if* or *while it was done*. When the last meaning is intended suffix 141 is employed for actions that are past and completely realized, but the action is considered as relative to the main verb and the action was not completely realized during the time of the main verb.

[15] The immediate past, recent past, and distant past tenses are distinguished in the English translations of examples only in the paragraphs which describe the respective past tense indicators.

(i.p.), manĭmčów *did you all raise it* (i.p.)?, točów *they all went* (i.p.).

Suffix 144 √-y ~ √-ye indicates recent past (abbreviated r.p.) non-collective action. It occurs word finally after suffixes of set I or stems of class 1. √-ye occurs after all consonants and after vowels when all the word preceding the suffix contains less than three syllables and no word medial consonant cluster; √-y occurs in all other cases. A change of stem which occurs before this suffix may be noted here: in stems of class 1 ending with an alveopalatal consonant plus e, the stem final e is replaced by i or optionally lost before suffix 144. Examples: wayváy *I swept* (r.p.), kĭwtóy *I went* (r.p.), toyé *he went* (r.p.), wimiyé *I tied it* (r.p.), ñewřyé ∞ ñewříy *he laughed* (r.p.), ñenořyé ∞ ñenoříy *it sank* (r.p.), wihšikyé *I dragged it* (r.p.), wahyé *I ate it* (*vegetables*) (r.p.), ñenpóy *he showed it* (r.p.).

Suffix 145 √-če indicates recent past collective action. It is mutually exclusive with and occurs in the same position as suffix 144: točé *they all went* (r.p.), mohčé *they all came* (r.p.), mahromčé *you all jumped* (r.p.), nĭmtapotačé *they all talked* (r.p.), nahsĭpĭnkačé *they all let go* (r.p.).

Suffix 146 √-čo indicates collective action. It occurs after suffixes of set I or stems of class 1; it occurs only before suffix 155: kačóko *everyone do it*, ačóko *everyone carry it*, awĭnčóko *everyone go to sleep*, enpočóko *everyone show it*.

Suffix 147 √-ta indicates imperative action involving motion to another place. It occurs word finally after suffixes of set I or stems of class 1: ačkorokatá *go wash dishes*, yĭtĭtmamnotá *go stop it*, apontá *go ask for it*.

Suffix 148 √-tan indicates action which takes precedence over other actions and which involves motion to another place. It occurs only with verbs which have a first person subject; it occurs word finally or before suffix 162: wentán ka *I must go see it just now*, čentán *let's go see*, wamehtán *I must go pick it up*, tĭtwĭntančéřĭ *let's all go sleep*.

Suffix 151 √-sĭ indicates present or future tense non-collective action. It occurs only in word final position following suffix 141: kĭwčésĭ *I am going*, wahrunkésĭ *I will open it*, netapomřikyásĭ *it is whirling*, wĭhtĭnoyásĭ *I know it*, kmokyásĭ *I will come*.

Suffix 152 √-še indicates present or future tense collective action. It is mutually exclusive with and occurs in the same position as suffix 151: tĭtĭhčéše *we all are going*, čihšikyáše *we all will drag it*, mĭmačéše *you all will get wet*, nakñiyáše *they all are burning it*.

Suffix 153 √-tu indicates collective action and occurs following suffix 141 and in word final position or before suffix 161: mokyátu *they all are coming*, mokyatkéñe *they all come*, meseřesmétu *are you all about to eat?*

Suffix 154 (√-sĭ ~ √-ši) ∞ √-pe indicates action in the immediate location which takes precedence over other actions. It occurs word finally after suffixes of set I or stems of class 1. Allomorphs within the parenthesis occur with verbs having a first person subject; √-ši occurs after a and √-sĭ after other phonemes. √-pe occurs with verbs having a third person subject. Examples: ahařĭ ka wahsĭpĭnkáši *wait until I let go*, ahařĭ ka keřemáši *wait until I am seated*, wĭhtĭnósĭ ka *I will think of it just now*, ahařĭ ka kmohsĭ *wait until I come*, wensĭ ka *I will see it just now*, ahařĭ ka ñenkápe *wait until he puts it in*, noró tompé *it depends upon his going*.

Suffix 155 √-ko ∞ √-kĭ indicates imperative action in the immediate location. It occurs word finally following suffixes of set I or stems of class 1 or suffix 146. √-kĭ occurs after a and after √-kah of the verb *to do* or *say*; √-ko occurs elsewhere: kaskó *say* or *do it*, noró kahkĭ *he will have to say*, etapakĭ *hit it*, enpóko *show it*, tán ehčóko *everyone stay here*.

Suffix 161 √-kñe ∞ √-keñe indicates distant past tense (abbreviated d.p.). It

occurs only in word final position; √-kñe occurring after suffix 141 and √-keñe after suffix 153: čisúsu kékñe *Jesus said* (d.p.), mokyákñe *he came* (d.p.), mokyatkéñe *they all came* (d.p.), nawsïnákñe *it became heavy* (d.p.).

Suffix 162 √-če indicates collective action and occurs after suffixes of set I, stems of class 1, or suffix 148; it occurs in word final position or followed by suffix 171: tïtkačérï *let's all do it*, tïtwïnčérï *let's all go to sleep*, tïtwïntančé *let's all go sleep*, nïwočérï *they all would have shot it*.

Suffix 171 √-rï indicates action contrary to fact. It is used in expressions of conditional action and exhorted action or desired action all contrary to fact. It occurs only word finally: wïtwórï *I would have shot it*, tïtwïnkïrï *we should go to sleep*, ñetïnomrï *it should have been left*, kuupřé čekrï *we should have brought our gun*. See also examples with suffix 162 above.

NOTES ON THE RELATIONS BETWEEN CHEMAKUM AND QUILEUTE*

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Chemakum and Quileute belong to the North Western group of American Indian languages spoken in the state of Washington. The original country of the Chemakum was the peninsula between Hood Canal and Port Townsend. When Boas visited Puget Sound in the summer of 1890 only three persons remained who could speak this language. The Quileute are on the coast south of Cape Flattery, and still number about one hundred. These two and Hoh are generally known as the Chemakum family, which, according to one classification, at least (Sapir: Science, N.S.54: 408, 1921), belongs to the Algonkian-Wakashan linguistic stock.

My source of information for the following notes consists of some Chemakum grammatical material, a vocabulary of 1,250 words collected by Boas, and a list of 150 words gathered by Livingston Farrand. The Quileute material is more abundant. I have texts amounting to about 20,000 words obtained from three different informants by Leo Frachtenberg, and a few grammatical notes, sentences, and words gathered by Livingston Farrand. Nothing has been published, so far, on Quileute grammar, and very little attempt had been made by Frachtenberg to elaborate the data collected. As for Chemakum morphology and syntax we have only an article of seven pages published by Boas in the American Anthropologist of January, 1892. So, the claim of very close relationship between these two languages, which is generally made, was based mainly on a comparison of vocabularies. After comparing the syntactic data that is now available, having made a rather careful analysis of Quileute grammar, I feel inclined to think this claim is well-founded, but we must interpret the word 'close' as expressing a degree of similarity comparable to that observed between High German and English rather than referring to the numerous points of contact that we find between, let us say, Spanish and Italian.

I find that more than half of the vocabulary cannot be traced to one common source by any conceivable phonetic transformation; tense suffixes differ considerably; as, for instance, the Chemakum future is expressed by suffix -k^{w}i, and the Quileute by -$\dot{t}$; for the perfect, Chemakum has -ci, Quileute, -ay; Chemakum has an imperfect tense ending in -lim; Quil. has no imperfect: the closest thing to it is the suffix -xa, which expresses an imperfective aspect of action, comparable to the imperfective type of the Slavic verb, and may be used for past, present, or future, so long as the action is

* Manuscript found among Andrade's papers by N. A. McQuown and presented to the Boas Collection of the American Philosophical Society Library in Philadelphia, where it is now available for consultation. The ms. shows a little editing and a few footnotes apparently in Edward Sapir's hand. In preparation for publication, Morris Swadesh has phonemically normalized the orthography along lines clearly indicated in the material and supported by remarks made by Andrade himself, e.g. 'Quite often Chem. o = Quil. i, but this may be the same correspondence as u = i, because in most of the languages of the North West there seem to be only three distinct vocalic points in their phonetic pattern: an a; a sound that varies from e to i according to consonantic influence; and a third one that, under similar influences, varies from o to u.' The ms. has been abbreviated by the omission of a few comments, including that just quoted, which become superfluous once the orthography has been phonemically normalized and which mar the clarity of the comparative presentation. The phonemic historian may consult them in the original manuscript.

conceived as not ended. However, the general structure of the two languages presents a great many more points of contact than differences. The vocabulary presents also a number of striking differences even in classes of words that are often relied upon in establishing genetic connections between languages, as, for instance, numerals, pronouns, family relations, some parts of the body,[1] etc. The following are illustrative (Chemakum given first, then Quileute): *seven* ćqu?ulkʷant, ɬawaqćisi; *eight* q̓ʷayikʷant, ɬawiɬali; *twenty* kʷałacči, ɬawa?asta; *mother* ?ukisina, ka?č; *man* cakʷisas, pu?uq; *brother* ?alis, hadus or ɬkadii; *sister* činnis, taɬu?upat; *he* -tix̣, -as; *ye* -icał, -ka; *wolf* ?acinis, liwacakił; *bear* casu?ut, ɬikil.

From a comparison of their vocabularies one may infer that Quileute and Chemakum were two distinct dialects long before their contact with the Europeans, or, at least, that previous to the advent of the latter there was not much intercourse between the two peoples speaking them. Thus we find that, although about fifty per cent of the total vocabulary available can be traced to a common source, very few names of objects introduced by white men can possibly be related. For example: *white man* x̣ʷiltim, hukʷa?aɬ; *pencil* ɬicatqɬ, ča?liitiquɬ; *storekeeper* cawaq̓ʷaya, pisiyacqal; *hat* ɬa?acipka, ciyapus; *gun* x̣ʷaltimɬat, ćiičił; *gunpowder* hupit, diqa?; *iron* camuqɬ, ɬax̣iɬ; *nail* čičcɬ, silaakidiɬquɬ; *pocket knife* čapa?aqʷilis, luqʷi?al; *bolt* (*of door*) ɬičaqɬimqʷɬ, liyixutiipiquɬ; *shirt* ci?icinis, ɬadiɬisquɬ; *shot* šat, ɬibi?ikitat; *spoon* sup̓uqɬ, sida?ap̓iɬ; *coal* cuksint, puxu?-usu?; *broom* qačiitat, ?iiq̓u?ucuuquɬ; *horse* tiqin, kiyutad; *lamp* quna?aquɬ, p̓iča?aču?; *shoe*; kʷukʷunhut, tikšu; *hammer* čičił, q̓ʷaxutiyuquɬ; *drill* (*auger*) luqʷa?atqɬ, tusi?-iyaquɬ; *whetstone* kʷa?atquɬ, kidiqit; *comb* ɬasćaqʷal, ɬabisčit; *pillow* miɬɬit, ɬiɬq̓us; *ax* taqu?ulqɬ, xʷaćiyaquɬ.

[1] Sapir's pencilled marginal note: 'A study of at least the latter two of these categories would doubtless show a surprising diversity in IE also.'

It is true that my list of Chemakum new terms is rather limited, but among them I have found only two that are related. In some instances one might, by an effort of the imagination, see some connection, but, as the phonetic changes that such connections imply have not been found in any other instances, one is not justified in presupposing them. In the list just given the only elements that can be safely identified are the frequent suffix meaning *instrument*, Chemakum -qɬ, Quileute -quɬ, and the suffix -t which is used in both languages to nominalize verbal compounds.

The closest correspondence is found in noun suffixes. These two dialects have in common with other Indian languages the peculiarity of expressing the same concept by an independent word and by a suffix, these two forms being entirely different in some cases. Thus, in Chemakum *canoe* as an independent word is hilulaqɬ, and as a suffix, -ku; the corresponding forms for *ear* are sisɬalt and -ɬa; for *fire*, niya and -spa. In Quileute we have ɬabil and -ku for *canoe*; ?ulaxaɬ and -ɬa for *ear*; ɬik and -spa for *fire*. Notice also the following: *head* Ch. -qanit, -ɬiq̓, Qu. dukučit, -ɬiq̓; *trail* Ch. muqluat, -ɬimit, Qu. ɬa?uqɬ, -ɬibit; *water* Ch. ćuwa, -sina, Qu. ɬʷaya, sida; *face* Ch. q̓ʷitaqʷil, -ɬi, Qu. ?uɬit, ɬi; *blanket* Ch. pi?isćač, -ačit, Qu. hukućat, -acit.

The fact that the suffixes are more nearly related than the independent words indicates clearly, it seems to me, that the suffix forms are older in both languages[2]; as there is no reason to suppose that phonetic laws would produce greater changes in independent words of two or more syllables than in monosyllabic elements incorporated in a verb complex, and phonetically welded to the other elements, as they often are. My impression is that most independent nouns in these two languages, and perhaps also in Kwakiutl, are fossilized phrases and clauses, the great majority of them containing a

[2] Sapir's note: 'Sounds reasonable.'

verb stem and nominal, pronominal, and adverbial suffixes which have or had independent meanings. If this is the case, the fossilization took place mainly after the two languages were two distinct idioms. The tendency to compound nouns in this manner was undoubtedly in action previous to the separation. So, we find many compounded independent words that correspond phonetically: *interior of house* tikʷat, tiwa; *gum* či?iša?a, cixa?; *mountain* ya?ašit, ?a?axit; *paddle* qa?amat, qabit; *dead man* ksuka, čiqa; *tomorrow* hutakʷuł, xutawił; *strong* x̣umila, ɬibiti; *dance* čiciyl, kicil; *house* ?ičiqa?a, ɬi?ikal; *help* či?iya, kiyi.

The majority of the elements which are syllables in these words are also found with independent meaning at least in Quileute. Thus tiwa is compounded with the nominal suffix ti- meaning *house* and -wa, *going to* or *toward*. In cixa, -xa means *together*.

A more interesting phenomenon in support of this view is presented by a few words which have only one or two syllables in common with the corresponding words in the other language, or whose analogous elements are arranged differently. These may belong to a period of transition in the development of Chemakum and Quileute from their common origin, or they may also be parallel developments after they diverged from their common source. The latter is possible if we consider that many of the elements with which these independent words were compounded have still identical semantic values in both languages. The following will give an idea of this interrelation: *salmon* kahakʷa, ha?diqʷa; *to run* lata?a, talaw; *to smell* masa, siba?; *point* (*end*) -ɬiqʷa, ɬidaqu; *woman* kʷitsapat, wi?isaćupat; *snow* čitukʷul, tukuyu?; *to sleep* mali, li?baɬ; *small canoe* ?akʷutqat, ?alutq; *ice* xača?a, xabića; *blanket* pi?isćač, hokućat; *nose* simusit, disusit.

I have not studied the Chemakum material sufficiently to furnish any reliable evidence that many of the independent nouns are, as stated, fossilized clauses. But in Quileute we find very frequently that an independent noun consists of three distinct elements: first, the prefix ?u- which means *to exist* when used verbally; second, a verb or noun suffix that may be found as a component of any number of verb complexes; and third, the nominalizing suffix -t. These composite nouns often stand for concepts which most languages express by their oldest words: ?ulawit *foot*: ?u- prefix referred to above, -la *to move*, -law *to walk*; -i- inserted according to euphonic laws; -t nominalizer. Reduplication is a grammatical process that indicates continuation or distribution in Quileute; so, ?ula?alawit, formed with the preceding elements, is the word for *leg*. In the same manner the following could be analyzed into distinct significant elements: ?uduqʷa?t *forehead*, ?ućiduqʷat *back of the head*, ?ućisuba?aɬayat *wrist* (-ɬayat *hand*), ?uɬit *face* (-ɬi suffix for *face*), ?u?čusit *nose* (-ču *to point*; -s *direction*), ?ulaxa?t *ear* (-lax one of the suffixes for *ear*).

As regards the phonetic correspondences between Quileute and Chemakum, I find that there is more divergence between vowels in medial and final syllables than in initial syllables.[3] In the final syllables very often Chemakum u = Quileute i; Chemakum a in several instances corresponds to Quileute i.

The consonantic relations are quite clear, and are as uniform as those of the Romance languages. The following are a few of which I am certain, since I found them in 50 or more cases.

1. Ch. kʷa, kʷi = Qu. wa, wi, whether initial, medial or final: *one* kʷił, wił; *two* łakʷa, ława; *nine* kʷał-sqal, wał-ɬali; *no* kʷa, wa; *to enter* tikʷal, tiwa?l; *upward* ćilikʷa, ćilu?wa; *snake* čayukʷa, ya?iwa.

2. Ch. m = Qu. b in all positions: *tree* hama?a, haba?a?; *grandfather* ?ama?a, ?aba?a; *trail* limit, -ɬibit; *neck* kamuqʷusi, q̣abuuq̣us; *hair* miłqʷu, bułku; *strong* ɬu?-umitu, ɬibiti; *four* mi?is, ba?yas.

[3] Sapir's note: 'Anything in accent here?'

3. Ch. n = Qu. d: *bird* nanu?uy, didu?us; *dog* činanu, kadidu?; *father* hina, hida?; *water* -sina, -sida; *finger* -k^{w}anu, -k^{w}adit.

4. Ch. č = Qu. k: *stone* čała, kaƛa?; *what?* ?ačis, ?akis; *elk* čičil, kikił; *dog* činanu, kadidu?; *your* -tič, -tik.

5. Ch. c = Qu. č: *copper* ciya?i, čayi?i; *thou* ciya, ča; *good* hac-, ha?ač; *blood* łictu, łičti; *chief* ?a?ct, ?ačit; *dead* ćiqa, čiqa; *thou* (suff.) -ic, -ič.

6. Ch. medial s = Qu. š in same position: *wind* časa, kiša?a; *deer* ?awatska, hawayiška; *many* ?isa, ?iš(a); *to meet* maqustixat, baq̇uštal.

There are many other correspondences that are very frequently found, but they are not as uniform as those just cited, and seem to depend on position in the word, the surrounding sounds, and possibly accent. Some of these are: Chem. š = Quil. x, as in the words for *mountain*: Ch. ya?ašit, Qu. ?a?axit; *gum*: Ch. či?iša?a, Qu. cixa?. Chem. velar q corresponds to Quil. mid-palatal k in some instances, and to Quil. velar x̣ in others. I shall not venture to define in what conditions these and other changes take place on account of the limited Chemakum material in existence, and of the limited time I have had at my disposal to study this question.

JICAQUE AS A HOKAN LANGUAGE

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1. The problem
2. Phonological note
3. Cognate list
4. Use of lexical statistics
5. Cognates in test vocabulary
6. Hokan-Coahuiltecan relationships
7. Requirements for further study

1. Jicaque of Honduras in the past has been listed as an isolated language or classed with Paya-Lenca and Chibchan,[1] but we find unmistakable evidence that it is a Hokan language. In this paper we set forth structural and vocabulary correspondences to prove the relationship, along with an analysis of the place of Jicaque within the stock based upon cognate percentages. While the main facts of the linguistic situation stand out clearly, the limited material available for most of the languages prevents a full development of phonological and morphological details at this time.

The presence in Jicaque of numerous Hokan-Siouan correspondences was first noted by Greenberg while making a comparative survey in preparing a paper, Historical Linguistics and Unwritten Languages, for the International Symposium on Anthropology of the Wenner-Gren Foundation.[2] The subsequent further study of the problem by both authors was done under the Linguistic Divergence Project sponsored by the Columbia Council for Research in the Social Sciences.

[1] See Harry Hoijer, Introduction p. 25, Linguistic Structures of Native America (Viking Fund Publication in Anthropology 6, 1946); J. Alden Mason, The languages of South American Indians p. 174 (Handbook of South American Indian, BAE-B 143, vol. 6, 1950.

[2] Subsequently published in *Anthropology Today*, 265–86 (Chicago, 1951).

2. The phonological equivalences in Hokan have been largely established by Edward Sapir's work.[3] The Jicaque agreements are generally obvious. A special point is that x^w and x have been replaced by k. Among some local dialects of Jicaque, r and n replace the l found elsewhere. Stem-finals have sometimes been changed, presumably by contraction with an added suffix. Because of the sparsity of Jicaque material no attempt has been made to distinguish the dialects. This accounts for variant forms sometimes given and for the fact that there are sometimes two or more distinct equivalents.

Jicaque and other forms in this paper have been phonemically interpreted and orthographically uniformized; any errors in the phonemic interpretation are surely not of a character that would affect the lexical comparisons.

3. The search for cognates is considerably hampered by the meagerness of the available Jicaque vocabularies and by their emphasis on words, such as plant and animal names, which have little utility for comparison at a remote time depth. And similar problems exist for most of the other Hokan languages with which Jicaque has to be compared.[4] The extent of the compara-

[3] Especially in The Position of Yana in the Hokan Stock (UCPAAE 13.1–34, 1917); The Hokan and Coahuiltecan Languages (IJAL 1. 280–90, 1917–20); The Hokan Affinity of Subtiaba in Nicaragua AA27. 402–35, 491–527, 1925).

[4] The material on Jicaque is taken from two sources: Walter Lehmann, Zentral Amerika (Berlin 1920), pp. 654 ff; Edward Conzemius, The Jicaques of Honduras, IJAL 2.163 ff. (1921–23). The Chontal is mainly from Francisco Belmar, Lenguas Indigenas de Mexico (Mexico 1905), pp. 188–217. Other principal sources: A. M. Halpern,

tive list should be judged with this in mind. We list more obvious similarities, with emphasis on cases showing relationships of Jicaque, Hokan-Coahuiltecan and Gulf languages.[5] Comparison with other language stocks belonging to Sapir's Hokan Siouan grouping, is made in a few instances where the agreement is particularly striking. It is convenient to include also some Hokan comparisons without Jicaque cognates, where we need them for the lexico-statistic counts given farther on.

-k adjective suffix, in Jicaque pek *white*, tek *black*, wek *good*, brek *many*; Yuman milk *black*, ahotk *good*, epilk *warm*; Pomo kedakedak *red*; Tonkawa makik *yellow*, maslak *white*.

First person: Jicaque na-p *I*, na- vestigial prefix *my*; Yuma nʸa *I*; Esselen ene *I*, niš- *my*; Karok na, ni- *I*, na- *me*, nani- *my*; Washo le *I*, lew *we*; Chimariko noʔut *I*; Yana ai-ʔni-ża *I*; Comecrudo na *I*; Coahuiltec na- *I*; Karankawa naayi *I*; Tunica -ni *I*.

Jicaque ku-p *we*; Chontal ki- *I*; Chumash ki- *we, our*; Tonkawa ka *I*; Pomo ke *we*; Karok kin- *us*; Yana -ni-gi *we*; Salinan ke *I*, ka *we*; Chitimacha -ki *I, me*.

Second person: Chontal i-ma *thou*, i-manki *you*; Seri me *thou*; Yuma ma *thou*; Salinan mo *thou*, -m- *thy*; Pomo ma *thou*, mi *thee*, mi- *thy*; Esselen nemi *thou*, meniš- *thy*; Yana aiʔnu-ma *thou*; Washo mi *thou*; Chimariko mamut, mi- *thou*, m- *thy*; Shasta mai *thou*; Achomawi-Atsugewi mi- *thy*; Karok im *thou*; Comecrudo em- *thou*; Coahuiltec mai- *thou, you*; Chitimacha him *thou*; Tunica maʔa *thou*.

Third person: Jicaque hu-p *he*; Chontal -u-pe- *he*; Chumash ho *that*; Salinan ho *that*; Chitimacha hus *he*, ha *this*, ho *these*; Pomo u *that, he* (distant).

Jicaque na *that*, nahac *there*; Yuma nʸaa- *that*, -nʸ stem of pronouns; Salinan na *that*; Yana na-gu- *therefore*; Comecrudo na-ni *he*, na- stem of pronouns; Tonkawa naʔa *thus*; Chitimacha naat *thus*; Coahuiltec namo *then*.

Jicaque kiwa *here*; Washo wa *here*, widi *this*; Yuma vaði *here*, vaða *this*; Chitimacha we *the, that*.

Interrogative: Jicaque kanlepa *when*, kat *where*; Chontal kana *when*, kaape *where*; Washo kunya *where*, kunyate *what*; Tunica ka- interrogative; Coahuiltec xat *how many*, xakat *why*; Comecrudo xat *where*, tokom *whatever, thing*; Chimariko qho- interrogative.

Yuma av- *what*; Yana ʔaci *what*, ʔambi *who*; Pomo am *who, what*; Chimariko ʔawilla *who*; Chitimacha ʔam *what*, ʔašt *how*, ʔampinki *where*.

Locative: Yuma -k *at*; Yana gi location, object relationship; Chitimacha ki *at*, kin *with*; Atakapa -ki *in, on*, -ik *with*.

one: Jicaque pani; Chumash paka; Tonkawa pax; Esselen pek; Yana bai; Chimariko pʔun; Coahuiltec pil; Comecrudo pek-weten (cp. elek-weten two). Also Yuki pawa, powik.

two: Chontal o-keši; Seri kaxkum; Yuma xavik; Chimariko χoku; Yana ʔux-; Shastan xokʷa, hoki; Pomo ko, xo; Esselen xulax.

three: Jicaque kont; Chontal a-fan-e; Esselen xulap; Pomo xoxat; Yuma xamok; Chitimacha kaayči; Karankawa kaxayi. Proto form χʷa.

five: see *hand*.

not: Jicaque kua *none*; Chontal k-; Chimariko χu-; Pomo kuyi; Yana ku-; Karankawa kom; Natchez koošac *no*; Tonkawa ooko *no*.

all: Jicaque put; Yana buiza-.

arm-hand: Jicaque pul, pel *arm*, pus

Yuma IJAL 12.25–33, 147–51, 204–12, 13. 18–30, 92–107, 147–66 (1946–7); Edward Sapir and Morris Swadesh, Yana Dictionary, ms. in American Philosophical Society Library; A. L. Kroeber, The Washo Language of East Central California and Nevada, UCPAAE 4.251–317 (1907); John R. Swanton, Linguistic Material from the Tribes of Southern Texas and Northeastern Mexico (BAE-B 127, 1940).

[5] Gulf is Mary R. Haas' term for 'the Muskogean family of languages plus Natchez, Tunica, Chitimacha and Atakapa.' See The Proto-Gulf Word for *Water* (IJAL 17.71–79, 1951).

shoulder; Chumash pu *arm, hand*; Chimariko hitan-pu *arm*; Salinan puku *arm*; Subtiaba pahpu.

ashes: Jicaque pe; Chontal ƛ-api.

back: Yuma -mak; Yana maki.

bad: Jicaque marara; Yana malla-.

belly: Jicaque kol *belly*; Chontal ƛ-ikuu; Pomo koy, xo; Chumash akšu; Washo ciguguš; Cotoname kox; Atakapa kom.

big: see *old*.

blood: Jicaque kat, ac; Chontal awas (perhaps read awac); Seri avat; Yuma xʷat; Chumash axulis; Salinan ekata; Pomo hata; Yana wadʔdu-wi; Shasta-Achomawi axta; Karok ax; Comecrudo kyal; Coahuiltec kʷas, hac; Subtiaba eʔdi. Proto form axʷat varying with xʷat; Jicaque kat from xʷat, ac conceivably from axʷat-s with weakening of intervocalic xʷ but may be unrelated. See *red*.

bone: Jicaque kere; Chontal l-ekaƛ; Washo di-bigeñ; Natchez ekʷel; Creek funi (from xʷani); Comecrudo xi. Other languages show reflexes of xʷa(n)- in compound with other elements: Chitimacha kaci; Atakapa ci (from kci); Seri itak; Chimariko hitχun; Yuman tyaka; isaka; Chumash seʔ; Salinan axaak; Pomo ihya; Yana ixdal-la.

brother: Jicaque na-pey *brother-in-law*; Washo peyu *younger brother*; Chumash pe *older brother*.

child: Jicaque way; Seri ove.

chin, beard: Jicaque cek; Shasta cawak; Chumash acüs (*beard*), Yana ẓawadći.

cold: Jicaque coys; Chontal ćoos; Yuman čuq, Kiliwi axčaq; Yana xaa-ćidʔ-; Chimariko xaca; Achomawi ašča; Tonkawa hacex; Atakapa akcaw; Alabama kasatka. Proto form perhaps xacaxʷ.

die: Jicaque te-puy; Yuma ʔapooy. Perhaps also cp. Tunica lupi; Chitimacha nuupi-.

drink: Jicaque mes; Atakapa em; Salinan ešim; Yana sii-; Yuman Mohave iθi; Seri k-asi; Karok is; Chontal šwa. Perhaps from imasi and isima as metathetized variants.

excrement: Jicaque piye; Shasta ipxai (*intestines*); Yana pa-ći; Salinan pxat; Chimariko h-ipxa (*intestines*); Subtiaba amba (from apa).

ear: Chontal išmac; Yuma ismalʸka; Chimariko hisam; Pomo šima; Yana malʔgu; Seri islo. Also Yuki cema, šum.

earth: Jicaque ma; Chontal ƛ-amac; Seri amt; Yuma amat; Chimariko ama; Pomo ama; Comecrudo kamla. Also Siouan ma.

eat: Jicaque te-k; Chontal -ka (*bite*); Salinan išax; Tonkawa yaxa-; Comecrudo kay; Chitimacha ƙaht- (*bite*), ƙušt- (*eat*).

eat: Yuma ama; Yana ma-; Chimariko hamma; Shastan -am-; Esselen am; Chumash umu; Salinan amo; Muskogi hump-.

egg: Jicaque pehey; Chontal ƛ-apik. Also Pawnee lipiku.

eye: Jicaque wut; Atakapa wul; Salinan ṭ-uwu (*face*).

fat, grease: Jicaque ponik; Salinan upikit; Chimariko -xu- (*obese*); Yana pui-; Achomawi ȧphau.

fire, hot, firewood: Jicaque awa *fire, hot*; Yuma aʔaw *fire*; Salinan t-aʔaw *fire*; Yana ʔau-na *fire*; Chimariko ʔaʔpu *fire*, h-au-na *tinder* (-na *wood*); Shasta awa *wood*; Subtiaba aaguu *fire*.

fly: Chontal -yu; Yuma ayer.

foot: Chontal imic; Yuma iime; Washo mayop; Comecrudo emi.

hand: Jicaque mas; Comecrudo mapi; Coahuiltec maw; Karankawa ecma (*hand*), ko-maso-pani (*five*); Chontal a-mahši; Yana ẓiman-. Also Keresan -amast-; Yuki mee, miipaʔt.

hand: Yana dal-la; Washo tatu; Yuma isalya-; Achomawi ili (from itli); Chimariko hican; Pomo tana. Chimariko hitan-pu *arm* and χuli-teni *left hand* seem to contain the same element but without the change of t to c; this can be explained if we assume two forms, itan and tan, deriving hican from hi-ican but hitanpu from hi-tan-pu, or by assuming variant initial consonants.

hear: Jicaque pakas; Yana ga-.

heart: Jicaque -has; -hos; Chontal husʔančey; Coahuiltec xasaal; Tonkawa yacanan; Seri imos; Washo d-emli.

horn: Jicaque seme; Chitimacha ʔims; Comecrudo yemo; Cotoname yomo.

hot: Jicaque pe; Chontal epal; Yuma ʔapilʸ.

house: Jicaque wa; Yuma ʔava; Esselen iwa-no; Chimariko ʔawa; Yana wa-wi; Comecrudo wamak; Subtiaba gʷa.

kill: Jicaque ti-kwaw; Pomo kum; Chimariko -ko-; Comecrudo kamaw; Chitimacha ƙet-. Also Keresan kaut.

leg: Jicaque tek; Chontal itungu.

meat: Jicaque pisis; Pomo peše; Yana basi; Salinan p̣aš (*elk*); Chitimacha kipi; Muskogean nipu; Chontal l-išik.

man: Jicaque kuy; Chontal ƛ-akuy; Diegueño ikuč; Pomo xak; Coahuiltec xaku; Tonkawa haʔakon; Chumash uxuy; Yuma nʸako (*father*); Chumash gogo (*father*). Also Yuki ƙew. Compare *old*; the word for *man* may come from the word for *adult*.

mother: Jicaque nee; Shastan ani; Pomo nixa; Yana nii-na; Washo -la.

mouth: Jicaque lam, lala; Tonkawa kala; Comecrudo xal; Atakapa kat; Yuma axaʔa; Pomo xacita; Chumash ïk; Chitimacha ša; Tunica šohu; Karankawa emi-akoy. Earliest form perhaps xa-la, with development in two directions as lala and axa, ixa.

near: Jicaque nya-pin; Yuma xiipan; Atakapa ipal; Chitimacha paye (*proximity*); Karankawa pawail.

night: Jicaque piste; Yana basii; Cotoname pay; Washo ta-pawit; Yana paawi-sa (*night falls*); Shasta upxa. Also Keresan ko-pso; Yuchi pato.

nose: Jicaque mik. (perhaps from m-yik); Seri hif, wuf; Yuma iixuu; Esselen hošis; Chimariko hoxu; Achomawi yammi; Karok yufi; Washo šuyep; Comecrudo yax; Cotoname yaʔx; Atakapa uc (from yuk-s); Chitimacha šiš (assimilated from yiš); Tunica riši; Muskogi yupo; Subtiaba d-aako. Perhaps yaxu, with various vowel assimilations.

old: Jicaque kokoy; Chontal akuy (*old*), -koy (*big*); Seri kakox (*big*); Chumash no-χaχ (*big*); Chimariko xawini; Yana xaaba-; Yuma kʷoraʔaka (*old man*).

rain: Jicaque yipa (*rain*), hipe (*it is raining*), yupu (*water*); Seri ipka; Natchez yoba; Muskogean Alabama oyiba, Hitchiti ooba.

rain: Chontal ukuy; Yuma ikʷe-; Chitimacha kaya.

red: Jicaque ke; Pomo kedakedak; Atakapa kuc (from kut-s from ketu); Pomo kača; Yuman koxʷat, ečawata, xʷat; Yana ba-wadʔ-; Karok ačut; Shasta ikʷata; Achomawi ačte. Possibly the same element as in *blood* or a different element which has become intertwined in some of the languages.

river: Jicaque cew; Tonkawa cakaw; Chitimacha čaʔaaƚ.

salt: Jicaque carin; Chitimacha ćahća (*salty*).

sing: Chontal šow; Yuma aašvaar.

sinew: Jicaque pupuy (*vein, nerve*) pey (*rope*); Yana baama; Shastan imme, pim, ippiu.

sky: Jicaque mol (*cloud*); Chontal l-emaa; Seri amime; Yuma ʔamay; Yana ẓabẓa; Salinan lem (*above, sky*).

sleep: Jicaque maha; Salinan me; Karankawa im; Comecrudo eme-t; Subtiaba ami; Chontal šmay; Seri sim; Yuma ašma; Pomo sima; Yana samsi-; Chimariko pohmu; Shastan icmas ici; Coahuiltec comoxʷam. Also Keresan sipa-.

smell: Jicaque kucuway; Chontal -we.

stone: Jicaque pe; Chontal apik; Yuma ʔavii; Chumash χīp; Pomo xape; Esselen šefe; Salinan šxap; Chimariko qhaʔa (*stone*), qhaku (*arrowpoint*); Yana xaga (*flint*); Pomo xaka (*knife, obsidian*); Salinan išak (*knife*), asaƙa (*flint*); Achomawi sat (*arrowpoint*). Evidently two elements, pe and qhak, which combine to form a compound in Pomo and some of the other languages.

sun: Jicaque laksak; Atakapa lak (*sun, glitter*); Pomo la (*sun*), alaša (*moon*); Comecrudo al; Muskogean Choctaw luwak (*fire*); Seri sax (*sun*), isax (*moon*); Salinan esxay (*morning, day*); Esselen asaca (*day*), asi (*sun*); Chimariko ʔasi; Shasta ačayi. The Jicaque is evidently a compound of

two elements, perhaps ala-k *glowing* and sax *sun*.

tongue: Jicaque peraŋ; Chontal ƛ-ipaƛ; Yuma iipalʸ; Seri ipl; Pomo pal; Shasta ipli; Chimariko h-ipen; Karok apri; Yana bawalʔ-la; Yana bal-la (*mouth*); Comecrudo expel; Atakapa nel; Chitimacha wen.

tree: Yuma ʔaʔii; Yana ʔi-na; Esselen iʔi.

wash: Jicaque te-pays; Chontal -pah; Chimariko -pok-; Comecrudo pelepla; Atakapa pac (from pak-s).

water: Chontal l-aha; Seri ax; Yuma axa; Pomo xa, ka; Chimariko aqha; Yana xa-na; Karok aš; Shastan aca, aš, acsi; Salinan ṭ-ša; Esselen asa-nax.

white: Jicaque pek; S. Chumash pupu; Chontal fuka; Karankawa peka; Comecrudo pepok; Washo tal-popoy.

wind: Chontal ƛ-awa; Washo t-ewesgiw.

woman: Jicaque kep, kek (*woman*), nakom (*wife*); Chitimacha kiča; Atakapa kis; Comecrudo kem; Seri kmam; Cotoname katam; Tonkawa kʷaan; Chimariko punsar (from kʷem-sa-r).

woman: Jicaque mumuy (*female*); Yana mariʔmi; Washo tamomo (*woman*), umlaya (*wife*); Pomo mata; Comecrudo mat (*mother*).

4. That Jicaque is related to Hokan-Coahuiltecan is clearly evident from the quality and quantity of agreements. The next problem is to determine its exact position in the stock. The most convenient objective method for doing this is that of lexical statistics, based on percentages of cognates in a test vocabulary.[6] Using a test list of 200 items, belonging to the sphere of every-day and relatively non-cultural meanings, we match them in each of the languages insofar as our material permits. The number of cognates is considered by reference to the total number of pairs available for comparison.

[6] See Swadesh, Lexico-Statistic Dating of Prehistoric Ethnic Contacts, APS-P 96.452-63 (1952).

We give the results of cognate counts for six languages—Jicaque, Chontal, Yuma, Yana, Washo, Comecrudo—taken as a fairly representative selection of the whole stock. Yana is taken as one of the Northern Hokan languages, a substock which also includes Pomo, Chimariko, Karok and Shasta-Achomawi. Yuma is taken as a representative of Seri-Yuman, because the available vocabulary is a little larger than Seri and it was found that both languages give approximately the same cognate percentages. Esselen, Chumash and Salinan were omitted because of the limited vocabularies available. Only one of the Coahuiltecan languages is included, namely Comecrudo, which has the advantage of showing higher percentages of agreement with the Hokan languages than some of the others. We thus avoid the uncertainties of dealing with minimal percentages, approaching the quantitative area of pure chance.

Because of the limited lexical materials available for Jicaque and some of the other languages, we have available in the different pairs of languages as little as 55 pairs in some cases and never more than 89 pairs. It will some day be possible to improve this situation. We are also handicapped by the fact that, even with Sapir's several papers, the study of etymologies is not yet sufficiently developed to guarantee accurate identification of cognates in many cases. In deciding what to include and what to exclude, we believe we have erred somewhat more on the side of overcaution than otherwise.

5. Following the method outlined, we obtained the results indicated below. For each pair of languages, we give the English for the items counted as cognates. The actual forms can be found in the cognate list above (**3**). To conserve space we do not list the items scored as non-cognates (e.g. Jicaque laksak, Chontal piču *day* or Jicaque pisis, Chontal lišik *meat*).

For Jicaque-Chontal, there were 79 items

of meaning which could be matched in both languages. Of these, we apparently have cognate forms for identical meanings in the following 19 cases: *three, ash, belly, blood, bone, cold, earth, eat, egg, leg, man, old, sleep, smell, stone, tongue, when, where, white.*

For Jicaque-Yuma, there are 17 cognates in 73 pairs: *I, here, that, when, three, blood, die, dust, earth, eye, fire, hot, nose, sleep, stone, tongue, woman.*

For Jicaque-Yana, 12 cognates in 74 pairs: *I, one, three, all, bad, fire, hear, meat, night, old, rain, tongue.*

For Jicaque-Washo, 11 cognates in 75 pairs: *I, here, where, belly, bone, drink, green, head, mother, night, white.*

For Jicaque-Comecrudo, 13 cognates in 89 pairs: *one, blood, bone, earth, hand, husband, kill, mother, sleep, tongue, wash, white, women.*

For Chontal-Yuma, 11 cognates in 48 pairs: *blood, ear, fly, foot, hot, rain, sky, stone, tongue, water, sing.*

For Chontal Yana, 13 cognates in 75 pairs: *thou, two, five, blood, ear, hear, meat, not, salt, sleep, this, tongue, water.*

For Chontal Washo, 7 cognates in 55 pairs: *thou, you, two, belly, bone, where, wind.*

For Chontal-Comecrudo, 15 cognates in 65 pairs: *I, we, bird, bone, earth, fall, fish, foot, hear, mouth, not, sleep, tongue, water, white.*

For Yuma-Yana, 15 cognates in 67 pairs: *what, at, two, three, back, blood, drink, ear, eat, fire, hand, sleep, tongue, tree, water.*

For Yuma-Washo, 7 cognates in 55 pairs: *I, here, this, eat, father, foot, nose.*

For Yuma-Comecrudo, 7 cognates in 56 pairs: *blood, earth, foot, nose, sleep, tongue, water.*

For Yana-Washo, 11 cognates in 92 pairs: *I, thou, we, two, dog, eat, hand, mother, night, say, woman.*

For Yana-Comecrudo, 12 cognates in 84 pairs: *one, blood, blow, fall, liver, not, rain, skin, sleep, snow, tongue, water.*

For Washo-Comecrudo, 6 cognates in 61 pairs: *all, bone, foot, mouth, nose, white.*

6. Reducing the foregoing figures to percentages, we find the following relationships:

	Jicaque	Co	Wa	Ya	Yu
Chontal.....	24	23	13	19	23
Yuma.....	23	13	13	21	
Yana.....	16	14	12		
Washo.....	15	10			
Comecrudo....	15				

Presumably the different degrees of relationship are based on the extent of contact among the Hokan languages when they were first diverging, that is, when they were regional dialects of a single language. The cognate percentages therefore suggest an approximate relative geography of early Hokan.

The lowest cognate percentages among these languages, 10%, when interpreted by the lexico-statistic constant of 66% ($\pm 4\%$) common retention after 1000 years, indicate that they represent the differentiated products of what was essentially a single language approximately five thousand years ago (calculated as 55 ± 7 centuries). Within a few centuries of that time, local dialects must have begun to show differences. Presumably contiguous dialects were largely the same while non-neighboring dialects were already noticeably divergent. Presumably, at that time, Comecrudo's neighbors to the east, the dialect forerunners of the present day Coahuiltecan and Gulf languages, shaded off in the same general way with lexical differences approximately proportional to the relative place of the dialects in the chain. Comecrudo fits into the dialect network of Hokan, since it is not more different from Chontal than the latter is from Jicaque or Yuma. This suggests that there is no sharp separation between Hokan and Coahuiltecan, that Hokan and Coahuiltecan and presumably

also Gulf are not discrete stocks or branches but merely three segments of the same continuous chain.

7. The present analysis helps to clarify the internal relationships of Hokan-Coahuiltecan to some extent, but much remains to be done both in verifying the conclusions reached so far and in extending the analysis to the other languages in the Hokan-Coahuiltecan-Gulf complex. To facilitate such study, it is clear that we need more complete vocabularies as well as more adequate phonetic and structural analyses. It is also necessary to exploit to the full the possibilities of reconstructing phonology and of checking etymologies afforded by the closer subgroupings within the total complex. For example, the study of Shasta-Achomawi-Atsugewi or of Seri-Yuman would make it possible to take elements back a thousand or two years in time, filling out the details of the earlier phonetic form, and would therefore greatly increase the assurance with which we can compare words of totally different subdivisions of Hokan.

MOSAN II: COMPARATIVE VOCABULARY*

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12. Introduction to vocabulary
13. Sources
14. Vocabulary

12. Capital letter abbreviations are used for Mosan, for the component stocks, and for the four main divisions of Salishan: M Mosan; C Chimakuan, W Wakashan, S Salishan; B Bella Coola, I Interior Salish, P (Pacific) Coast Salish, T Tillamook. Small letters combined with the foregoing capital letters indicate specific languages or language groups: Cq Quileute, Cc Chemakum; Wk Kwakiutl, Wh Hailtsuk, Wn Nootka, Wd Nitinat (based on native form with d for n), Wm Makah; Il Lillooet, It Thompson-Shuswap, Ik Kalispel, Io Okanagon, Ir Coeur d'Alene, Im Columbia; Px Comox, Pn Nootsack, Pp Puget Sound group, Pt Twana, Ph Chehalis. Abbreviations may be combined, e.g. BIkT, to show that a word is found in two or more languages.

Most phonetic signs are used in unambiguous established values, but some may require definition: y front semiconsonant, ł voiceless lateral fricative, ƛ voiced lateral affricate (dl), ƛ̣ voiceless lateral affricate (tł), c voiceless sibilant affricate (ts), ʒ voiced sibilant affricate (dz), ч voiceless shibilant affricate (tʃ), ɟ voiced shibilant affricate (dʒ), ɢ voiced velar stop, ʀ voiced velar fricative, χ voiceless velar fricative, ṗ etc. glottalized (glottalized continuants, like ṁ, have glottal onset), ʜ pharyngealized spirant (Arabic ḥ), ʿ pharyngealized glottal stop. Double vowel letters show long vowels; raised dot after a vowel letter in Nootka means variable length. Asterisks are not used for reconstructed forms in the proto languages, since it is in any event obvious that they cannot be other than reconstructions. Spellings have been normalized throughout.[1] Parenthetical (R) after a Wakashan suffix indicates that it is added to a reduplicated stem. Double quotes " at the beginning of a Waskahan suffix indicates sonantizing influence on preceding elements.

13. Principle sources.

13.1 For Salish. Franz Boas and Herman Haeberlin, Sound Shifts in Salishan Dialects, IJAL 4.117-136, 1927; Boas, Comparative Salishan Vocabularies, ca. 1925, ms. in Franz Boas Collection of American Indian Linguistics, American Philosophical Society Library, Philadelphia; Swadesh, Salish Internal Relationships, IJAL 16.157-167, 1950; Swadesh, Salish Phonologic Geography, Language 28.232-248, 1952; Swadesh, Salish Cognates, ms. Boas Collection.

Gladys Reichard, Coeur d'Alene, Handbook of American Indian Languages volume 3, pp. 517–707, 1933; Reichard, Stem List of the Coeur d'Alene Language, IJAL 10.92-108, 1939; Reichard, Composition and Symbolism of Coeur d'Alene Verb Stems, IJAL 11.47-63, 1945. Boas, Chehalis Vocabulary, 1934, ms. Boas Collection. May M. Edel, The Tillamook Language, IJAL 10.1-57, 1939; Edel, Tillamook Combined Vocabulary, 1935, ms. Boas Collec-

* For Mosan I: A Problem of Remote Common Origin, see IJAL 19. 26–44; Mosan I includes a statement of the phonological correspondences, upon which the present comparisons are based. Through an inadvertence, the ms. of Mosan I went to the printer without the usual underlining for italics to set off the translations, according to regular IJAL practice.

[1] On the problems of normalizing Salish material, see Swadesh, Salish Phonologic Geography, Lg 28.235, 1952.

tion. Hans Vogt, The Kalispel Language, Oslo 1940. Ms. test lists of Bella Coola and Nootsack kindly supplied by Stanley S. Newman and Paul Fetzer, respectively.

13.2 For Wakashan. Edward Sapir and Morris Swadesh, Wakashan Comparative Vocabulary, 1952, ms. Boas Collection. Boas, Ethnology of the Kwakiutl, 35th Annual Report, Bureau of American Ethnology, 1921, esp. Vocabulary, pp. 1389–1466; Boas, Notes on the Kwakiutl Vocabulary, IJAL 6.167–178, 1931; Boas, Kwakiutl Grammar, with a Glossary of the Suffixes, APS-T 37.199-377, 1947; Boas, Bella Bella Texts, New York 1928, esp. Vocabulary, pp. 173–291. Sapir and Swadesh, Nootka Texts, Philadelphia 1939, esp. Part 3, The Primary Structural Elements of Nootka, pp. 235–334.

13.3 For Chimakuan. Manuel J. Andrade, Quileute, Hdbk of Am. Indian Languages vol. 3, pp. 149–292, 1933; Andrade, Quileute Vocabulary, ms. Boas Collection; Swadesh, Chemakum Lexicon compared with Quileute, 1952, ms. Boas Collection.

14. -aa durative. C -a, W -aa (Wn -a·, Wk -a).

-ayp *door*. Ir -ipns, Cq -tip.

-ayɬ *toward, referring to*. Ir -iɬ *toward*, Wn -ɥ-iɬ (R) *with reference to*. Also cp. Ir -tuɬ *for, in reference to*, and see -ɬ.

-ays *in water, on bottom of water, on beach*. T -ys *water*, W -"ays *on beach, on sand bottom*. (Wnk -"is).

-ayk *back*. S. -ikn, Wk -ik-. (B -ik *visible top, surface*, PhT -iɥn, Ir -iɥṅ; Wk -ik-la *on back*, -ig-i? *back*).

-awa *following, other*. See λawa; also Ph ?uċs *one, another*, T cu- *two*, Ph cu?ps *seven* (from *two above*), Cq hi?uul *with*, Wn -a?u· *following* (fr -aẇa-a), na?u- *following*, ʜa?u- *do in turn, follow*, hu?a- *back again* (perhaps fr W ha?u- by transposition).

-uwa, -uẇa *thou*, found mostly with demonstrative stems. In Salish the most frequent pronominal stem is ?n- (also in ?nimaɬ *we*) but n-, tn- and ?in- (< ?yn-) are also found: B ?inu, T nki, I ?nwi, Ir kʷuẇe (kʷu- second person prefix), Px ngi, P Nanaimo tnw, P Lummi tnkʷ, Ph nwi. With demonstrative s-, Cq has su?u demonstrative *that near thee*, Wk su *thou*, Wn independent suẇa, suffix -su·k *thou*. Seemingly against the theory of a Mosan -uwa meaning second person is Wk nu- *I, we* (independent nugʷa *I, we*, suffix -nu?xʷ *we* exclusive), but this may be analogically reshaped after the second person; the n- here is not a demonstrative element but the regular archaic first person. Mosan -uwa without demonstrative stem is found in Wk verb endings -uχʷ *third person near thee and visible*, -u? *near thee and invisible*, and with demonstratives in yu *he near thee*, laχuχ *third person object near thee*, yχuχ, ysuχ *by him near thee*.

-aawi *become*. Ph -aw *become*, Wn -awi-(ƛ) momentaneous ending, Wd -ii-wi-(ƛ) *become* (-ii- as in -ii-ɥi-ƛ of same meaning).

-aws *face, eye*. S -us *eye, face* (TI), C -ɬ *face*, Wn -u·ɬ *on face*. C and W from -aws-ɬ. Also cp. C -us *nose*, Wn -c-suɬ (R) *at eye*.

-aap *back, back of neck, behind*. S -aps, W -aaṗa. (T -ahsw, B -apsm, Ph -aps, Ir -eps *back of neck*, Ik sq̓al-eps *necklace*, -elps *back of neck*; Wk -aṗ *nape of neck*, Wn -aaṗa-ɬ *on the upper back, behind*).

-aaba *bottom, under*. S -ap, W -aabaw. (T -ah, Ikr -ep *foot, bottom, behind, after*; Wk -"abw- *underneath, bottom*, Wn -?apuɬ-a *underneath, on bottom*).

-aana *corner*. T -an *corner*, Wk -n-i? *corner*, Wn -w-ink *in the corner* (< -w-ana-kʷ).

-aanaqi *belly, body*. Ph -anq *body*, Wn -inqi *belly*. See -k *belly*.

-anud *become*. Cq -du, W -anud. (Wk -nd *become*, Wn -anuƛ momentaneous, Wd -aadiƛ with -iƛ instead of -uƛ by analogy with the most common momentaneous endings).

-aanta *ear*. S -ani (< -aantay), Cc -ɬa, Wk -"atu (< -"aataw). (T -ani, Ir -eni, Ik -ene?).

-aanł *fur, blanket.* B -ańł, Cq -q̓ʷaał *fur,* Wk kʷt̓-ał *blanket* (kʷt- *stick over*), Wn -ʔ-a·ɬ *on a fabric surface.*

-inkχʷ *weather, season, year.* Ir -nxʷ *weather,* Cq -xiksa *year,* Wk -ʔnχ *season,* Wn -ʔi·чн *season, year of,* -qʔiчн *years* (numeral suffix).

-ał plural. S -ɬ in nimał *we,* Cc -ał in -icaał *you* pl., maaʔał *we,* Wn -ʔał *they* (from ʔa- demonstrative plus -ał), Wd -ał *they.*

-aał *perceive, look, see.* Cc -ałsii *look,* Cq -qał *look,* Wn -uʔał *perceive,* нacqał *having good eyesight* (нa- *satisfactory*), -p̓ała *looking on admiringly,* Wk -p̓ałtu *see.* -sii in Cc -ałsii related to independent stem Cq siy- *see;* W -p̓a- related to Wk -p̓a *to taste,* independent p̓q-a *to taste,* Wn -p̓ał *smelling, tasting of,* Wk -p̓a-la *smelling of.*

-aasi *surface, roof, sky.* Ik -asq̓at *day, sky,* Ir -asqet *day, sky,* -aʔst *surface of a round object,* C -s(u) *roof,* Wk -(a)s *side of a flat thing,* Wn -a·s *on a surface,* momentaneous -a·si-ƛ, Wn -a·sċa *on roof, in sky,* ṅaas *day.* Also cp. Wk -"ʒu *on a flat thing.* Ik has variant -q̓at *day, sky,* perhaps an originally distinct partially synomymous element.

-aaχʷa, -aasχʷa *breast.* T -asχa *fathom* (i.e. the measure across the breast), Ik -aχʷeч *breast,* Wh -ahawi- *in front,* -ashawi- *on the chest.*

ʔa- demonstrative, interrogative: ʔay- *that, the,* ʔaw- *some, location,* ʔam- *location, sit,* ʔana-, ʔaas *that, the,* ʔaaki- *who,* ʔaχ- *do thus,* ʔaqi- *what,* and other formations. Ph ʔi-wat *someone, anyone,* ʔi-tam *anything,* Cq ʔiqaa *there,* Cc -ʔii *he* (subject), Wk -ʔiʔ noun ending, ʔixala *come near,* Wd ʔiyaχ *there,* Wn -ʔi· *the one who is,* -ʔi·tq *he who,* Wnd ʔiʃ *and;* Ph ʔuċs *one, another,* Cq ʔuuʔuti- *some,* Wn ʔuuʃ *some;* Ik ʔu *and,* Cc ʔuuʔiiiчuu *he,* ʔuuquu *that,* Wn ʔu-н *he,* ʔuнʔiʃ *and,* Wk ʔola *only* (< ʔw-ala); IrkPh ʔułxʷ, nʔułxʷ *enter,* C ʔu- *place,* Wk ʔw- *place,* Wn ʔust.- *place;* S ʔm(t) *sit,* Wn ʔam- *location;* S ʔn- pronoun stem in ʔnca *I,* ʔnwi *thou,* Wn ʔana *that* (subordinating conjunction used with pronominal endings), ʔana *thus much,* Wk ʔngʷa *who;* T ʔas *the* (with proper names), BTPn ʔas-txʷ *inside,* B ʔastam *where,* Cq ʔas *that;* Cc ʔaƙis *what,* Wn ʔaчaq *who;* Is ʔχil *do thus, behave thus,* Wk ʔχ- *to do, be;* Cc ʔaqsqaaʔil *do what,* Wn ʔaqiq *what,* ʔaqis *do what;* Cq ʔa-, Wn ʔani inflected subordinating particle. Also T ʔa *the,* Ik ʔe *here, now,* BPh ʔa-ɬ *at,* Po ʔanm *how,* Ik ʔsчen *do what,* Ir ʔent- *to be in a place,* Cq ʔa- formal stem for noun formations, C ʔaaċ *when,* Cc ʔatiiʔis *what,* ʔaaċii *what,* Wk ʔagʷa variant of ʔngʷa *who,* Wh ʔgʷi *who,* Wn ʔaн *that,* Wn -ʔa fossilized noun durative (taaƛa *belly,* niċa *nose,* naƛa *fish tail,* siƛa *tail*).

-ʔaa *pursue, catch.* Cq -ʔal *catch* (-l continative), Wk -ʔa (R) *try to get,* Wn -ʔiiн (R) *try to get* (fr -ʔaa + -yiн *trying to*).

ʔay *not.* Cq ʔii-, Wk ʔis-.

ʔaya *much,* ʔayaχʷ *large amount,* ʔaya or ʔaaya *good.* Ik ʔya̓ʔpqiṅ *all,* Ir ya̓rpqiṅ *much, many,* C ʔiʃ *many, much,* Wn ʔaya *much, many;* B ʔiχʷ *far,* Wn ʔiiн *big* (< ʔiiχʷ-, as seen in ʔiiwaчiƛ inceptive); BIt ya, Ph ʔayi, Pnt ʔay *good,* Wkh ʔik *good.* Also Wk ʔʔiʒi *great,* Wh ʔig-as *ten (big on a surface),* ʔyakaswala *ten to each,* Wk ʔiƙ *above,* Wn ʔiƛa- *lift up.* Perhaps -aya also in P Clallam nin *much, many,* T niɬ *much, many,* Ik -miɬ *too, very,* Cq чiikʷ *large,* Wn saya- *far.*

ʔayp *pinch.* Ik ʔip̓, Wk ʔip-a.

ʔaytk- *sleep.* Ik ʔitʃ, Ir ʔitч, Wnd weʔiч.

ʔaykʷ- *clean, clear.* C ʔiiq̓ʷa- *sweep, clean,* Wk ʔikʷ-a *clear house.* Perhaps cp. ʔaya- *good.*

ʔana *make sound.* Cq ʔada- *speak,* Wk -k-ʔala *sounding* (< -k-ʔan-la), Wn -ʔin *making a sound of.*

-ʔisa diminutive. Cq -ċa, Wn -ʔis, Wd -ʔiʃч (< -ʔis-ч). Cq -ʔʃƙ baby-talk suffix in relationship terms (ʔuulu?ʃƙ *father,* чiʔiila?ʃƙ *uncle,* ʔaba?ʃƙ *grandparent*) appears to be a borrowing from Nitinat.

ʔał *untie.* Cq ʔiɬ-iil *untie* (vowel assimi-

lated to following), Wn ʔałχʷ- *unpack*. Perhaps cp. Wk qił-a *untie*.

ʔals- *meat*. Cq ʔaʔasayat, Wk ʔls-.

-ʔiks *eat*. Cq -ċ, Wn -ʔi·s, Wd -ʔi·ks, Wk -q̇s, -ks.

ʔaxit *mountain*. T ʔʃtan, C ʔaʔaxit.

ʔuxʷ-. Cq ʔuxʷac *he dipped it*, Wn ʔuxʷ- *dip paddle, topple over*.

-ʔaχaw *neck*. Cq -q̇us, Cc ʔuu-q̇us, qamuu-qs, Wk -ʔχu. Also cp. Wk q̇uq̇uṅa.

hi- demonstrative: hiy- *that, there*, hina- local or empty stem; ha- demonstrative. Ir hiʔi, hyi- *that which, the one who*, Cq hi *this*, Cc hiiʔił *he, they*, Cq hii- *to be*, C hiiʔi- empty stem for nouns (*wing, nape, stem of boat*), Cq hi- empty stem for actions, Wn hił- *there*, Wk h- stem for second and third person possessive pronouns, hi *he near him*, hi- empty stem; Ir hn- *in*, Wnd hina- empty stem (Wd hid-); not many examples from Salishan, since most Salish languages have lost original h. Cq ha *that distant visible*, C haakʷuł *near*, C hakʷuu- *come*, Wk hala *come back*, Wn haʯis- *on this side*. With loss of h in most Salish languages, hi- and ha- are confused with ʔa-.

haa *good*. Pn hał *good*, C haẃ *good*, Wk hił *correct, right*. Perhaps also cp. Wd haaċ *long*, Wn haaċa *fairly long*.

hawyi or way- *stop, finish*. Ik hoy- *stop doing*, Pp xʷuy- *stop*, Ik wiʔ *finish*, Ir gʷeẏ *finish*, Cq huyi *only, just*, Cc huuyaaʯi- *to finish*, Wn hawił- *finish*. Perhaps cp. Wk wla *stop*.

haama *eat*. Ph ʔum *feed*, Ik ham *gnaw, eat up*, Ir ʔem- *feed*, Wk hm-ala *keep in mouth*, Wh hmc-, hṁap *eat*, Wnd haẁa-. S also has forms with -p: Ir hep *gobble*, Ph ʔup *eat it*, T ʔahal- (h < p).

hiχ- *breathe, blow*. Cq haχaatił, Cc haχaalił *breath, wind*, Wn hiʜ-aa *breathe, blow*. Also cp. Wkh has-la *breathe*, Wh hał-la *rest*, Wn haʃ-aa *breathe, rest*.

ya-, yaa-, yay-, yaχ demonstrative. Ir sya- *he whose business is*, Ik ye *this*, Cq yaʔak feminine plural, Wn yaa *that*, yaqʷ *he who*; S -iʔ final of nouns and local suffixes, e.g. słaniʔ *woman*, -aniʔ *ear*, Wk -iʔ noun ending, Wn -i, Wd -iʔ noun ending; Cq yi- demonstrative (with endings for gender, case, nearness, visibility), Wn -yii *he who, that which* (relative indefinite), yii *that yonder*, Wk -i *that, the* (< -yi); Cq yiχ *the* (subject article masculine), Wk yχ *that* (object). This demonstrative used as locative stem, e.g. S ynsn *tooth*, ynwas *heart*, yxn *leg*, C yiyaawaa *below*, yaxʷuł *ocean*, perhaps Wk yulaga *stay*, yeq-ala *property*, Wn yuuł- *harbor, channel*, Wn yaaʔał *looking on at a performance*.

-ya *bush, tree*. S -ya, C -ya. (T -ya *bush, tree*, Px -ɹa in ɹaʔɹa *tree*, saʔyɹa *leaf*; Cq -ya *tree, log*, Cc -ʯat *trees*, numeral suffix).

ya(a)- *go, step, move*, yaaxʷ- *shake*. T yqu *move*, Ph yq̇ʷa *move away*, T yhu *go fast*, Ph yp- *walk*, Cq yikal *go, continue*; Cc ʯiẃi- *jump*; T yalak *walk around*, yal *twist*, Ph yaƛ̓ *go home*, yać *turn around, return*, Ir daχt *go*, Ik yiẃ *move, shake* (i-mutation), Wh ya-la *move*, yaq-a *pass*, Wk yawix- *move, shake*, Wn yac- *step, walk*; Ph yaχʷ *tremble, shake*, Wn yaxʷ- *shake, brush, sweep*, Wk yaxʷ-ʔid *fan the fire*. Further forms in Ph: ypalχʃ *visit*, yq̇ʷpatq *step*, ytχ- *move swiftly*, ytχʯ *wriggle*. Perhaps also cp. Cc ʯaayukʷa *snake*.

yaa- *work, do, use*. S yay *work, weave*, Wk ya- *work, do, use*. (T yayha, Ik yey). Also cp. Ph yus *work, weave*. For semantic association of *work* and *weave*, cp. Wn mamu- *work, weave*.

yaa- *bad, sick, to scold*. Cq yapul *sore, tired, difficult*, yaaƫuu-ƫayat *left arm*, Wk yala *wrong*, Wkh ẏak *bad*, Wn yaaʔak *sick, sore*, yaaʯaat *sorry for*, yanu- *ill*, ẏim.- *unfortunate* (< ẏama-, cp. ʯim.- *fortunate*). Wk also has yl- in ylkʷa *hurt*, ylq-a *sore eyes*; also cp. Wk ya- *decline, give up*, Wn yaa- *say harsh words, deny*.

ya(l)- *trade*. Ph yal *hire*, Cq yaaʯu- *sell*, Cc ʯaawtiʯt *store*, Wk hil *hire* (< hyl, regular reduplication of yl-).

yaχʷ- *melt*. Ph yxʷ-, Wk yχ-a.

way(s) *man, person*. Pn swiqa, Wkh wism *man*, C wiʔscaapat *woman*.

wahak^{w} *go*, -wa *move away*. Ph wak^{w} *go*, Wn waha·k *go*; Cq -wa, W -wa *move away*. (Wk -wls *out of house*, -u, -we *off, away*, Wn -waʜsuł *move out of hollow*). Perhaps W -wal in Wk -wls *out of house*, Wn -wi· *point comes out*. Also cp. Wn wałaak *go*, wał-ʃiƛ *go home*, -wiłta *out of canoe*, -wii?as *go out of house*, Wd -wiy *go to*.

wa *not*. C wa, W way. (Cq wa *not*, Cc k^{w}aa?alxa *not, no*, Wk wi *not*, Wn wik *not*, wi- *insufficient*).

waa- *pull*. Ph waʃ- *pull*, wacix^{w} *to lead*, Wh wat-la *pull*.

wa(a)- *dead*. B wnċ *kill*, T kahas (< wapas), Cc k^{w}aali-sti *dead*, Wk wanm *dead*. Perhaps cp. Cc k^{w}apa- *weak*, Wk wan-ała *poor*, W wayn-aa *go to war*. Cp. wa *not*.

waa- interrogative. TPI swat *who*, B wal *who*, Wn waa-st- *where*, ẇaayaq- *which*, Wk ẇi- *how, where* (< ẇaaya-), ?ng^{w}a *who* (perhaps < ?ang-waa); also cp. C waał, wiił *one*. Similarity between Ir ?ng^{w}at and Wk ?ng^{w}a must be accidental since Ir g^{w} necessarily goes back to S w; however, both contain related demonstrative-interrogative first elements (see ?a-). Suffix -st- in Wn means place, as in hist- there, yaast- there, yiist- yonder.

ẇaalaa *large*, Ph walaʃ *very*, Wk ẇalas *large*. Also Wk ẇaẓu *wide*.

wał *canoe*. T -kł *canoe, length*, Ph wił *canoe* (i-mutation), Wn -?u·ł *having as means of conveyance* (< ?a-wał, with demonstrative as first element). Note relation of stem in one language with suffix in others, which must be due to the conversion of a stem into a suffix.

-bi *enter*. Ik pilʃ *go in*, Wk -bta *into hole*, Wn -"pita- *into house*. Also cp. Wk pns- *put in*.

bu- *person*. C pu?uuq^{w}, Wk bg^{w}-anm. Cp. paawa(x^{w}) *breathe*, since *person* may be derived from *living being*.

paawa(x^{w}) *breathe, blow*; paawa(s) *swell*. Ph puχ^{w}- *blow*, Ik pux^{w}- *to blow upon, to smell, stink*, Ik pewlʃ *breathe*, Ir pex^{w}- *wind blown*, Ir pig^{w} *breathe* (also *swell*), Cc puuχ- *blow* (e.g. on fire), puuχtii?iluu *wind*, Wk pux^{w}-a *blow*, Wn puux^{w}-aa *blow, inflate*, Wn puutq- *breathe upon*; B pusm, Ph pus-, Ir pig^{w}- *swell*, Wk pus-a *fleshy, swell*, Wn puχ^{w}- *expanded*, pux^{w}-iqs *box with rounded cover*. Also cp. Ir pis- *large*, Wk buł-a *swell*, Wkh bx^{w}- *swell*, Wk ṗix^{w}- *shaman blows*.

-pa(t) *plant, bush, tree*. S -łp (BIr), Cq -pat, Wk -a?m, Wnd -apt.

pin *time*. S pn- *time of*, W -ṗin *times* (used with numerals). (Wk -ṗn-a, Wn -ṗit; Wd -i?bit perhaps from pre-Nootkan -ṁin variant of -ṗin with assimilation of ṗ to following nasal.)

ṗaaƛq- *possessions*. Ir ṗałq- *store up*, Wn ṗatq- *goods, freight*. Perhaps borrowing; in any event relation of ł to t is not clear.

pilł *flat*. Ph ṗiłł *thin*, Ik płil *thick*, Ir peł *thick*, Wk pl-a *thin*, Wh pl *thin and flat*, Wd puk *thin* (< pil-k^{w}). In Salish, the difference between *flat thick* and *flat thin* is shown by diminutive glottalization.

pala *down feathers*. T halst *down, feather*, Wk ṗlm *wool*, ṗl-a *pluck feathers*, Wn *ṗayaał*, ṗuuqƛiitim (< ṗalaw-qƛ-iti-ma), Wd ṗuuq-uk *down feathers*.

pulx^{w} *dust, mist, smoke*. Pn splk̓^{w}m, P Clallam spayk^{w}ŋ, Pp spilx^{w}, Il spilk^{w} *dust*, Cq puxuusu?, Cc puu?usʷit *ashes*, puułuu?a *smoke*, Wk ṗlχ- *fog*.

ṗaac *foam, spray*. Ph ṗic- *spray*, Ir ṗać- *squirt*, Wn ṗac- *foamy*, ṗaχ- *apply powder*. Perhaps cp. Cc ṗuuł- *white*.

pux^{w}- *drift*. Cq pux^{w}aal *drift, blown by wind*, Wk px^{w}-a *float*, Wn puχ^{w}-aʷiʃt *float* (suffix means *on water*). Cp. Ik pl'ip *drift, float*.

baaq^{w}, baaq *fire*, biix, biiq *bright*. T huq *fire* (u-mutation), Ik ṗ?ap *fire, burn*, pat *to boil*, C -spa *fire*, Wk -baq^{w} *flames*, Wn paƛ-aa *flaming, lit up*; S paq *white, get white*, piq *white*, Ik ṗex^{w} *bright, shining*, Ik ṗaq *flash, shine, bright*, Pn piq̓^{w} *yellow*, Cc piʃa *white*, Cq piixli?isu? *yellow*, Wk bix-a *phosphorescent*. (T haq, Ir peq *white*, Ik paq *fade, get white*, ItkPn piq, Pnxt pq

white). Also cp. Cc pinaquuluu *clear*, Wk px-a *to heat*, perhaps cp. Wn p̓iʃ-aq *bad*, p̓iч *lean, poor*, Wk p̓iqa *rotten*.

-m causative. S -m, W -aam. (T -w, Ikr -m; Wk -amas, Wn -ʔam-, Wd -aʔb-, the Wnd forms made with demonstrative ʔa-).

maa- *in house*. T wayax *to enter in number*, Ph may- *enter*, Wn ma- *dwell*, maʔas *tribe*.

maa- bite, muq̓ʷ- *swallow*—perhaps two originally separate stems which have influenced each other phonetically and semantically. Ph makʷ- *bite*, Wk malxʷ-ʔid *eat*, malikʷ-a *chew*, makʷ-la *fish bites*, Wn makʷit-ak *with mouth tightly closed*, m̓a-*bite*; Ph mq̓ʷ- *swallow*, Wk mk-a *swallow*, mxʷ-ʔid *bite*, Wn m̓ukʷ- *swallow*. Also cp. Wk muxʷ-ʔid *bite* (Newettee dialect).

maa- *we*. T ʔn-wał, B ł-mił *we*, Ir -met *we* transitive, C maʔa (Cq lubaʔaa, Cc maaʔał).

maa- *laugh*. Ir mexʷ, Cq baya.

maa *head, hair*. T waqin *hair*, Ph matn *head*, Wk -manu *head*.

ma(a)-, mał- *move, swim, fly, be alive*. S mawł *alive*, smłk *fish*, maći *snake*, C maq̓u-*meet*, Cq biyił *move, stir, budge*, Wk ma *swim*, Wnh mat- *to fly*, Wn mał- *shift position*, Wn -mał- *moving*, Wk me *fish*, Wn maamaat-i *bird*. (Il mawl, T tac-wakl *alive*; B smłk *fish*, Ir smłiч *salmon*; Pt bacay, Pp micac, T waći *snake*). Also B mamis *fly*, Ir macp *bee*, Ir hameɬtmʃ *fly, insect, maggot* (-tmʃ, cp. tmʃ *world*).

may(n)- *turn, twist*. Ir min- *turn*, Wn mink̓ʷ- *circle*, mitxʷ- *rotate*; Ik milq̓ʷ *round, spherical*, Pn micł, Px msaƛ *kelp rope*, Wn mayinkʷ- *close circle of dancers*, Wkn mit- *twist fibers (to make rope)*. Also T wsukł *round*, Wk mls- *turn head*, m̓l-a *plait rope*, Wh ml-a *twist rope*, Wh mliq-a *swing in a circle*.

muyas *four*. S mus, C maʔyas, Wk mu, Wn muy-, muu. Cp. ma(w)- *pile* and Wn muxt-ak *all*. The word for *four* in Proto Mosan could have been based on an element meaning *all*, just as today *ten* is based on *completed* (нayu) in modern Nootka and on *good on surface* (ʔig-as) in Hailtsuk.

ma(w) *pile*, maw(t)- *all*; perhaps mu(w)-, muw(t)-. Ph mk̓ʷ *pile up*, Ir maq̓ʷ *objects lie, pile*, Ik malt *mud, clay, earth*, Ik moq̓ʷ *mountain, lump*, P smant, smank, B smt, T waqs *clay pellet*, Ir malq̓ʷ *spherical, lump*, Pn smnat *stone*, Wk mu *pile up*, mu-χˢ *load canoe*, m̓w-is *heap on beach*, mola *carry many things on shoulder* (< mw-ala), Wn maw-iqs *box with telescoping lid*, m̓uk-sy̓i *stone*; T wutał *all*, Wn muxt-ak *all*. Also cp. Wd duub *all*, Cc tuumaaʔaa *all*, Ik milk̓ʷ *all, whole*, Ir melk̓ʷ *whole, intact, complete*.

maw- *short*. T wuk-akł *short*, Cq buxc *short*, Wn mutk-imł *short block*, mutq-ak *cut off in block shape*, mut- *cut, bite off chunk*. Perhaps also cp. Cq buuciick̓ʷaʔ *thin*, muuʔuctuuʔu *thin, fine*, Wk mut-la *carry food from feast*.

mawχʷ- *hot*. Cq buuxuʔ *warm*, Wn muxʷ-, muχʷ- *to boil*, muн- *blazing*. Also cp. Cc muuʔali-stiqiiiʔi *it is boiling*, Wk mdlqʷa *to boil*, Ir malʼ- *uncomfortably warm, come to boil*, Ph młч *summer*.

-ma(na) *instrument*. Ir -mn *instrument*, Wn -min in e.g. kuн-min *rattle*, W -ma *thing* (Wk -m, Wn -ma).

munłkʷ *hair*. B mnłkʷa *hair*, Cq buułku. Also cp. T wa-qin *hair*.

mank- *dung*, maa- *dirty, muddy*. Ph mnч, Ik m̓naч, W mank- (Wk mnk- *dung*, Wn maч-, maчqak *dirty*); Ir may *muddy*, mul *soil, dirt*, Cq basiʔ *bad, dirty*, baa- *defecate*.

maał *horn*. Cc maaʔlcii *antlers down*, Wn maał *horns*. Cp. S wnaw, Wk wƛaχ *horn*.

maał-, miił *sleep*. Ik meł, C maaɬiiʔa (Cc maaɬiiʔa, Cq ɬiʔbaaʔt by transposition of consonants); Ir mił *rest*, Wk miχ-a *sleep*.

mis-aa *smell*. Cc masa, Wn mis-aa, Wkh mis-a (W mis-, miis-). Cq siiba ʔaa appears to be a transposition of an older miisaʔaa, but Cc also has siiʔima-. Perhaps also cp. Ir sum̓, Ik suʔ *smell at, sniff*, Wk ms-la *greedy for food*, Wh ms-la, mxʷ-la, Wn -miнsa *desire*.

maaka(s) *louse*. P makn, miskn, T wʃчn, Il mikn *louse*, Wn maч̓as *flea*. But the Nootka may be an ancient borrowing from some Salish language.

-d *having, attached to,* passive. Ir t- *on and part of,* Cq -ti *have, be in connection with,* -t passive for a few verbs, Wk -"ad *having,* Wn -ʔat, Wd -iʔt inalienable possessive, passive (ʔa-, ʔi- demonstratives).

ta(a)-, tay- demonstrative, taa- interrogative, -t noun-forming suffix. S t masculine *the,* T tl *that,* tla *then,* PhIr -t- *him*; B taχ *that,* tayχ *this,* T ta *them,* Ph taχ *that,* Ir te-*thither,* Wk -da sign of definite; T tika *now,* Pn tiya *he,* Wd tii *that, thus,* Wm tidaa *he,* tica?aa?at *they*; S stam *what,* Pn watas *who* (< M waa-taa-), Cq taq, Cc taqaayu *who,* Cc taqiiyu *what,* Cq tat *when*; Ir -tɬ *that which,* W -(i)t occasional noun final (e.g. Wk sina-t *plan,* Wn his-it *sockeye salmon,* ƛan-at *wedge*), C -t regular noun-forming suffix, S -t final of nouns (e.g. S timt *person*). Demonstrative t- as base for suffixes to make nouns, e.g. S taχ^wc *chest,* Ph tmʃ *world,* tmix^w *earth,* T ɬ?aʔi *hand,* W tak- *belly.* The examples of Salish nouns based on Mosan ta- are far from exhaustive, since every language in the stock undoubtedly has either a few or many such formations. Probably related to the demonstrative is Cq ta- *if,* since the use of demonstratives for inflected relational particles is also found in Wakashan (W q- *if,* Wn ʔani *that, because*).

ɬa- *know.* Cq. ɬiʔa *know, find out,* Wn ɬapat- *think, plan.*

ɬi- *stone.* B ɬχt, W ɬi(i)-. (Wk ɬism, Wn ɬi-). Also perhaps cp. Ph tims *stone maul.*

ɬaa- *lie.* Ik ɬaq *lay something down,* Wk ɬaa-gił *tree lies on ground.* Also cp. T tɬk- *lie down,* Wk ɬik-—*lie on back.*

tay- *fall, throw.* Ik ɬip- *fall down from high place,* B tay *throw,* W tay- *fall, throw.* (Wk tiχ- *fall,* Wn ɬi- *fall, throw*). Also cp. T tʔ *fall,* tɬ *throw,* Pn tus *fall.*

tay- *person, man.* S timt *person, man,* C tiiʔiyał *husband,* (Pt stibt, T stiwt, Ilt stimt). Also note Ppn stubʃ, stumk, Px toʔmiʃ *man, person,* Pn tmʃ *world,* tmix^w *earth.* Evidently the word for *person* is based on the demonstrative stem with suffixes; in Coast Salish the suffix is -mx (or -mʃ) found in tribal names.

tuw- *to cover with soil.* Cq tuʔwul, Wn tuuk^w-.

tu-, tuw(x^w)- *jump.* T tʔ *fall,* tɬ *throw,* Ir ɬp *jump aside,* Cq taɬitil *jump,* Wd ɬubaa *salmon jump*; Ir ɬux^w-ilʃ *one jumps off,* Ik ɬux^{w}t *to fly,* Pn tus *fall,* Wn tux^w- *jump.* Cp. tay- *fall, throw.*

ɬaw- *cut.* Cq ɬuk^{w}ac *cut,* Wk ɬusa *cut,* Wn ɬuc- *cut hair.* Also cp. S tup- *punch* (Il tupχl, Pn tupył), Wk ɬls *split halibut.*

ɬa(m)- *to tie.* Ph ɬq- *to tie,* ɬqqx^w *belt,* tmiɬn *rope,* W ɬam- *tie* (Wk ɬm-a *lash up,* Wn ɬam- *girded,* ɬap-ẇanim *belt,* ɬamuq-ak *tied in knot*).

tum- *dark.* P tmɬ *red paint* (-ɬ noun ending), Wn tum- *dark,* tumiis *charcoal.* Cc timił is evidently a borrowing from Salish, Cq tiʔii- *to paint* is perhaps unrelated.

-ɬama *so many at a time.* Ph -ɬmʃ, Wn -ɬim.

ɬunχ^w- *head.* B ɬnχ^w, Wn ɬuн-ćiti. Also cp. C -ɬiiq^w.

ɬu(k)- *protrude.* Ir ɬʔ- *protrude,* Wn ɬuʔk- *protrusion, hill,* ɬuʔx- *lump*; Ir ɬk^w *be uneven like roots pushing up ground,* T ɬkiykanʔ *to swell,* Ir ɬoł *lumpy, sticky with mud,* Wn ɬum- *lumped, heaped up,* ɬupq- *lump.* Also cp. Wn ɬik^w- *pad of flesh* (e.g. on heel or finger tips).

tak^w *skin.* T ɬiki *skin,* Cc ɬq^{w}ins *skin, bark rope,* Wd tuk^{w}aq *skin.*

ɬiq- *sit.* Ik ɬaq- *lay something down,* T ɬqi *to set,* tɬ- *lie down,* Cc ɬaq- *sit on,* Wn ɬiq^w- *sit.* Also cp. Ph twil *sit* singular, Wk ɬik- *lie on back.*

tux^w-, taaχ^w- *spit.* Ph tχ^{w}sʔi, Cq tux^w- (also tuux^{w}il *saliva*), Wd tux^w-; Ik ptaχ^w, Ir tpeχ^w (< pteχ^w), Wn taax^w-.

tux^w- *tremble.* Ph tx^{w}al *fear,* Cc tuu?saa?a *tremble, shake,* Wn tuн- *trembling,* tuuн-uk *afraid.* Also cp. Ir ɬox^w *fear supernatural witch powers,* Wn tuut- *to thunder.*

-tχ^w *house, tribe.* T -ał-tx *house on house,* Ir -atx^w *house,* Cc -tχ (recorded only in k^{w}iniyu-tχ Quileute), Cq -ɬ *dwell, tribe,*

Wh -ʔitχʷ *inhabitant*, Wn -ʔatʜ, Wd -aʔtχ *residing, tribe.*

-na *in number.* T ƙinʃ, Ikr ƙʷinʃ *how many*, Wn ʔana *thus many*, Wk gn *how many.*

na-, naa-, hina- locative or formal stem. T n- *at, to*, PhIk n- location, Ir niʔ- location, Pn ni *at*, Cq d- in daʔq̓uu *eye*, dukʷɥit *head*; T na *to stay*, Cc naʔ *here*; Ir hn- *in*, Wn hina-, hid- empty stem. Also note S n-, tn- ʔn- used in forming pronouns.

naa- laa- *protruding tongue.* Ph lam- *put out tongue*, Wn nak-aa *with tongue protruding*, Wd lakʷ- *to put out tongue.*

na(y), la(y) *I.* S -n *I, my*, Wk -n *I, we*, Wn -niˑ *we.* Ir -l *me*, C -l(a), -li *I*, Cc laaʔał *I*, Cq lubaaʔa *we.* Wk independent pronoun nu *I, we* and Wn niiẇa *we* are formed on the same stem but with endings which seem to be analogically taken from second person (see -awa).

nay- *fire.* B niʔχʷ *fire*, Cq diiqaʔ *smoke*, Cc niiyaʔ *fire, fuel.* Also cp. W ṅaa- *light, day*, ṅaak- *look, see.* Perhaps also cp. Wk lqʷ-a *fire*; note alternation of n and l in preceding and following entries.

na(w)-, law- *sing.* Ilt snam *song*, Ik snkʷnim *song*, Ik nkʷune? *sing*, Wk nl-a *sing*; B nuyamł, P Pentlatch lulum, Px yuwu *sing*, T lululutn *singing shaman*, W naw- *sing* (Wnd nu-, du-, Wh nnuya), Wk noqadi *song leader* (< nw-aq-).

naw *wet.* Ph nus-, Cq duʔuq. Ikr nas *wet* seems to be a reversal of u-mutation.

naw- *old.* Ph nawł *old, large*, Wkh numas *old*, Wkh nus-a *tell a myth* (that is, *relate ancient things*), Wk ṅula *older sibling.* Wkh nus-a is like, Wn ʔiiʏaʻ-in *tell myth*, based on the regular Wn stem for *old.*

-naw *alongside.* T -asnkyu *side of person*, Ir -ɬniẇ *alongside*, Ik -ɬniẇt *side of person*, W -aaṅaw *alongside.* (Wn -aˑṅawi-, Wd -aˑʔdi-, Wkh -aṅw-; Wd evidently reshaped under the influence of the momentaneous ending -adi-, synonymous with -adawi-, that is, -awi- is treated as though it were part of the momentaneous ending and omitted to produce a simpler form of the momentaneous.)

nawa-, lawa- *fear.* T lk- *surprised, frightened*, lakus *fear*, Cc nawa- *frighten, fear*, Wk nuƛ-a *scared*, Wk noła *threaten* (< nwał-a), Wh nuł-a *scared.* Also cp. T lʃ- *angry.*

-nama *by means of.* Ph -nm *by means of*, Wk -''anm *obtained by means of*, Wn-nim (R) *having the objective of obtaining.*

na(m)- *one, complete.* T nɥ̓-, P nƙ-, I nƙʷ-, Wk ṅm, Wh ṅn (transposition), Wn ṅup- (syllable-final m becomes p), Wk ṅaxʷ-la *alone*, ṅaxʷ-a *all*, Wn ṅama- *only*, ṅap-sa- *all in the same place*, C naχaaʔa *very much.* B smaw may be from snm-aw (-aw as in TPh nɥ̓aw *one thing*), in which case it would bear evidence of nama- as a Proto Mosan form. Cc ɥ̓amiiʃ could be related to S nƙ- is we can assume loss of initial na.

-nis *tooth.* BT -ans, Ir -ins, Cq -dił (perhaps from -dis-ɬ). Perhaps cp. Wk -s-xe *tooth, sharp edge.*

nil- *to fly.* Cq didiidu?us *bird*, Cc nanuuʔu *bird* (perhaps from nil- by assimilation of consonants), Wk nl- *to fly* (Newettee dialect).

nis *nose.* Cq disuusit (cp. Cc simuusit with another stem and with suffix -uus-it *on nose*), Wnd niċa, niċ. Also cp. Wk xnʒ-as *nose* (xnʒ- *snore*, -as *vessel*).

nak *fish tail.* Cq -daaqʷa, Wn naɥ̓a. Perhaps cp. Cc nihiċilt *tail of quadruped.*

-ƛ *becoming, future.* Cq -ɬ *becoming, future*, Wnd -ƛ sign of momentaneous, Wk -ƛ *future*, Wn -y-iƛ *future.*

ƛa(a)- *sew.* T łxu, Ir łexʷ *sew*, I łkʷ-mn *awl, thread* (*sewing instrument*), P Lkungen sƛkʷiŋs *awl*, Px ƛiqʷmin *thread*, C łaʔapaʔa *sew.*

λa(a)-, λaaxʷ- *stand.* B łm *stand*, ƛ̓n- *stop, stand*, Pn łχilχ *stand*, ƛ̓aʔay- *sit, squat*, Wn ƛa- *erect*, ƛakiʃ- *standing afoot*; I ƛaχt *tall*, C ƛ̓axʷ- *wake up, get up*, Wk λaxʷ- *standing.*

ƛ̓a- *grow, tree.* Ph ƛ̓ʃƛ̓ʃ *tree*, ƛ̓ċ *grow*, Wk

ƛał-a *sprout*, ƛnak *branch*, Wn ƛaq-aa *grow*, ƛaqa'-as *tree*, ƛaqapt *bush, branch, leaf*. Also perhaps cp. Cc ƛiiq̓a?a *green*, Cq ƛiiq̓a-pat *bushes*, Cq ƛu?uub *grass*, Cc łapica *grass*, Cq -łał *grass, hay*, Wk łnχ *green*.

ƛa(a) *fast, hard*. Ph ƛaχ *hard, solid*, Ik ƛaχ, Ir łaχ *fast*, Wn ƛaẏax^{w}- *rapid*, Wk ƛmχ^{w}-a *stiff, hard, brittle*, ƛmq̓a *yew tree*.

λaa demonstrative, *nearby*, λawa *again, and, two*—sometimes with interchange of meanings. Ik ƛe *now, then, already*, Ph ƛa *future*, Wn ƛaн *now, then*; Pn ƛu *and*, B łnus *two* (perhaps fr n-łus), C ław *two*, Wk λaẇa, λu? *and*, Wn ƛa?u-u *another*, ƛaa?uuk *again*. With interchanged meanings: Cq ła(ti) *again, still, yet, just the same*, Wkh -λa *but*, Wn -ƛaa *again*, Wn ?aƛa *two* (if with ?a- demonstrative); Ik ƛu? *now, then, already*, Ir łu? *there*, łuẇe *that*, Pp ƛu- *future*, Wn ƛawa-a *close*, Wk λo-ba-la *touching* (*close at end*). Also note T łiya *here*, Pn ƛiyanu this. λ- used as a base for local suffixes: Ph ƛaч *belly*, It ƛana *ear*.

ƛay- *skin*. Ph sƛiч, Wk ƛis-a, Wn ƛiн-aq.

ƛawq *bare*. Ph ƛuq̓ *bare*, Ir łq̓^{w} *bald*, Wk ƛuq *bare*.

ƛi(m)- *hurl missile, shoot*. Ph ƛmx- *cast spear*, Ir ƛap- *shoot*, Cq ƛax^{w}ac *shoot with gun*, Wk ƛmk^{w}- *throw spear in a game*, Wn ƛi- *shoot* (*with arrow or gun*). Ik ƛ?ap *shoot*, ƛap-min *arrow* with consonant initial from another source, perhaps from tay- *throw*.

ƛa(c) *fat*. Cc łic?ił *fish gravy*, łiċitit *brains*, Wn ƛac *fat part of meat*, Wh ƛas-i? *fat part of meat*, ƛac *obese*; Cq ƛiikquuł *fat*, Cc łiipa?a *fat part of meat*, Wkh ƛat-a *oil hair*, Wk ƛq- *to soak*, Wn ƛaq- *oily*, ƛaq-mis *oil*.

ƛaq- *slap*. Cq ƛaq̓a- *slap*, Cc łaṕilii *strike with palm*, Wk ƛq-a *slap*, Wn ƛaн *flatwise against*.

ƛaa-q^{w}a- *eye*. B łaq^{w}s, Ir sʏłus-mn, Cc łaq̓uu (contrast Cq da?q̓uu, with another stem). Also perhaps cp. Ir sʏłus-mn *eye*, Cc łaƛ^{w}u *one-eyed*. λaa- is evidently the demonstrative stem.

-ł continued position. Cq as final of locative suffixes, e.g. -dił *tooth*, -ƛ̓uł *ground, soil, dirt*, -q̓uł *point, peak*, Wk -ała continued position (compounded with -a durative), Wn duratives yaał *there*, yiił *yonder*, hił *there* (as against combining forms yaast-, yiist-, hist-), Wn durative of local suffixes, e.g. -ashu-ł *on chest* (momentaneous -ashawi-ƛ), -askuł *at mouth* (mom. -aksawi-ƛ), -?aqƛ *inside* (< -?aqst-ł, mom. -?aqstu-ƛ), -?apuł *underneath* (mom. apawi-ƛ).

-ł noun formative. S common especially in Ph (e.g. tix^{w}cł *tongue*, ʃwł *road*, kwł *wife*, micł *thread*, tmł *red paint*), Wk tac-ł *olachen net*, cgł *berry variety*.

-ł *inside*. B ?ał *at*, -ałł *inside of mouth, throat*, T -ałał *chest*, Ir -ił *inside, flesh, meat*, T -ał-tx *house*, Ik -ełx^{w} *house*, Ik -ełće? *all over inside*, Ik n?ułx^{w} *enter house*, W -''aył *in house* (Wkhnd -''ił).

ła-*wide*. PI łq-, łaq-, Cq łii?u?, Wn ƛuq.

ła(a)-*sew*. T łxu, Ir łcx^{w}-, C ła?apa-.

łu- *split*. Cc łu?uq^{w}- *split*, Wh łk^{w}-a *pull back, pull off board*, Wn łu-?uk *board*, Wd łupʃiƛ *split*. Also cp. Wk ƛmka *split fuel*, ƛnẏa *split wood*, Wn ƛat- *distend, split*, ƛanat *wedge*.

łay *pull, jerk*. Ph łix^{w} *take away*, łiq- *jump*, łik^{w}- *pull in with hook*, Cc łii?ałχal *pull out hair*, Wk łinm *take away, rob*, Wn łik- *jerk, pull fast*, łit.- *twitch*. Also cp. Wk łk^{w}-a *pull off* (*branch*), Ir łiṫk^{w} *cause to jerk*, łeṫk^{w} *jerk*, łeṫp *one jumps*, łiṫp pl. *jump*.

łay(m)- *meat*. S sliq^{w} *meat* (T a?łiqi, B ałixlix *boiled meat*, It sliq^{w}, Ph łik^{w}), Cc łim?uqł *meat*, Wn łiṁ-aqsti *spinal cord* (*meat-within*).

łay(ч)-, łayχ^{w}- *mat, fabric, to wrap*. Cq łiч- *wrap*, Wn łic- *fabric covering*; Cq łikiitil *wrapped*, Cc łii?ча?a *net*, Cc łałiip̓aacat *quilt, blanket*, Wn łik^{w}aχał *cloth*, łiẇan-ak *cloudy*; Cq łiχ- *put around*, Wk łix^{w}- *mat*, Wn łiн- *fabric covering*, łiχ^{w}- *lightly covered*.

ław *leave*. Ph łwa, Wk łuwaƛa.

łum- *rain, hail*. T słwulx *hail*, Pn słmx^{w} *rain*, Pp łmx^{w}ila *hail*, Pn łmx^{w}ila *hail*, Pt łbwiyχ *hail*, Cq łuubu?uq *rain*.

łunk- *woman*. TP sł?ni or słani?, Wnd

łuч-. Also perhaps cp. Pn łux^{w} *abduct a woman*, łq^{w}- *to buy a wife*, Wk łk^{w}ani? *old woman*.

łaak^{w}, łal *weak*. Cq łakłil- *worry, despair*, Wn łak^{w}- *poor, miserable*; T ƛł *sick*, Ik ƛil *dead*, Wk łl'a *dead*. Perhaps cp. Wn łi?a-a *to miss*.

łaax^{w}- *man*. Cq łaax^{w}a? *common man*, Wd łaaχuk *man, male*. Wk ławnm *husband* might be related, but Boas explains it as ław-nm *obtained by love* (łax^{w}- *to love*).

łaq^{w}- *break*. Ph łq^{w}, Cq ƛaƛ^{w}al, Cc ƛaqu- *break*, Wk ƛq^{w}-a *break off branches*. Also perhaps cp. Cq łas-al *break*, Wn łap- *rip open*.

łuχ^{w} *spit*. B łχ^{w}t *saliva*, T łx *spit*, Cc łuχ^{w}- *to spit*. Also cp. Cq łaqaqa- *spit out, vomit*, Wd tux^{w}- *to spit*.

laa *go*, -laa *continuing, durative*. Ik lap- *travel by boat, navigate, paddle, row*, Ik lalam *roll from side to side*, Cq laaqal *drive away*, laqa *run away*, la?uu *walk*, C lata- *run*, Wk la *go*; T -ul intransitive ending, Ir -ul habitually, C -l continuative, Cq -la *move, be in motion*, Wk -la continuative, Wnd -ya· post-vocalic durative, Wk -lk^{w} *doing habitually*.

lap- *drill*. Ph lpx^{w}- *drill*, lpx^{w}ł *hole*, Px yipx^{w} *hole*, Cc luuq^{w}aa?at- *drill hole*. Perhaps cp. Wk lup *empty*.

lak^{w}- *weak*. Ph lqus, Wk lk^{w}-a.

lak^{w} *appear in sight*. Cq lak^{w}al *appear, come out from hiding*, Wn ẏak-aa *in view, peering out, having one's neck stretched out*. Also. cp. Cc laa?aчi?ii *to appear*.

-lmaχ^{w} *person, tribe*. Ir -lmx^{w} *person*, Wk -?inuχ^{w} *tribe, one who does*, Wh -nχ^{w} *clan*. Presumably the combination lm developed to W n by assimilation of m to the position of l. The most common suffix for *tribe* in S is -mx, which may originally have meant *place*, judging from the fact that it has both meanings.

-c- infix. C -c- distributive infix, Wk -s-, Wn -c- infix accompanying reduplication.

-ći- *long object*. Cq -ći *spear*, W -ćiq *long object*. (Wk -ćq, Wn -ćiq).

ci- *to lie*. Ph ck^{w}- *lie*, Ik cqal *lie on back*, Cq cacaal *edgewise*, Cc cicuulii *lie*.

-ćaa *blanket*. T -ića *blanket*, Cq -ćay *blanket, bed*, -ća *have clothes on*, Cc -?acat, pl. -?aćayt *blankets* (numeral suffix). Also perhaps cp. Ik -iće? *all around*, Wn -w-iic *along the edge, around the head*.

ćaa- *flow*, ćaw-, ćax^{w}- *wash*, ca(a)x^{w} *flow, drip, wash*, ẓalaał *lake*. Pn ćam *flow*, T cak- *leak, drip*, Ph capʃ *creek*, Cc ćuuwa *water*, Cq -ći *water*, Wk ća-la *tide, current*, ćaχ- *tide runs out*, Wn ća- *flow, river*; Ir ćaẇ, Ik ćew, Cc caax^{w}a- *wash oneself*, Wk ćux^{w}-a *wash*, ćnk^{w}-a *wash hands*, Wn ću- *wash*; Ph cax^{w}- *leak, drip*, Ir hn-ceχ^{w}t *stream, river*, Wk cx^{w}-la *overflow*, cx^{w}-a *tide flows*, cax^{w}-a *drip*, cox^{w}mis *raindrops*, Wn can-aa *leaking*; B cał, T cłał, Ph całł, Wk ẓl'ał *lake*. Also cp. Cc caax^{w}- *bleed*.

ću- *new*. T cićstx, Cq ćata?, Wn ćuʃ-uk *new*, Wk ćx-as *new mat or blanket*.

чa-, чay- demonstrative. T cc *this* feminine, cnił *he, she, it*, Ph cni *he, she, it*, Cq yiчa *that near thee*, чa?a *him* visible at a long distance; Ik ci? *there*, ci *this, that*, Ir ci- *near thee*, ciẏe *that*, Cq чi? invisible known, чi?чi? *him* invisible unknown (feminine kʃi?, kikʃi).

ẓa(a)-, ẓay- ẓaw- *mouth, speak*. B -uc *mouth, rim*, T -cn, It -cn, Ir -cen *mouth*, S cu-cn *mouth* (B cuca, PI cucn), Cq -swa? *language* (perhaps fr -c-ą^{w}a?, cp. -k^{w}a? *speak*), Wk -ẓaq^{w}-a *speak*; S cu- in cu-cn *mouth*, Ph cut-, Ik cu- *say*, Wn -ćuq^{w}-a *in mouth* (ć perhaps from analogy of -ću· *in hole*); T cinikat *say*, Wn ciq- *speak*. Perhaps cp. Wkh sms *mouth*.

ẓaa-, ẓay- *straight*, ẓay- *righthand*. B caƙ^{w} *straight*, Cq cixay *straight*, Cc ciʃa?a *straight, steer*, Wk ẓak^{w}-a *straighten out a bend*; Ir ćiẏ *right hand* (cp. ćik^{w}-e? *left side*), Cc ciʃ- *righthand*.

-чa *side*. Cq -чa? *side* (*of any object*), Wn -ca- *at side, end* (-caqću· *at the end*, -ca·qs *at the side of a vessel*, -ca·qs *on the side*, -ca·s *at one of a pair of body parts*).

чa(y)- *to fly*. Ph ciccipi *bird*, Cq чaчa?, Cc caca?a *to fly*, Wkh ćik^{w}a, ćik^{w} *bird*.

ćay- *guts, rope.* B ćima *guts,* Cq ćiipt̓iit *knot in hair,* Cc ćiina?a *guts,* Cc ćiiyuukʷt *fishline,* W ćays- *guts, rope, strung out,* ćaẏama *guts.* (Wk ćym, Wh ćiẏm, Wn ćiẏup, Wd ćiiyip).

ćay *meat.* T taʃćiy, Wn ćisq-mis.

ч̓ay- *drip, dip up.* Cq ч̓iluut̓al *drip,* ч̓i?luwa *water,* Cc ciiχaa?a *cataract, to drip,* Wk cyusa *dip,* ciq- *dip with feasting ladle,* ciχ̓a *ladle,* cik-a *pouring among,* cix-a *trickle down,* cy- *draw water, dip up,* cylgs *water carrier,* ciɬ- *sprinkle,* Wn citk- *to drip, sprinkle,* ći- *to dip up,* ćiitk- *spurt out in a jet.* Cp. ćaa- *flow.* Perhaps cp. Ik sixʷ *pour, spill a liquid.*

ч̓ay(axʷ)- *stand.* Ik ćil *stand (long objects),* Ir ćel *stand,* Cq ч̓i?yaxu? *stand,* Wk ćiχʷ-bi? *prong,* Wn ćiinati *arrow.*

ʒaam-, ćawkʷ- *suck.* Ph ća?m- *suck,* Ir ćoṁ *suck on solid object,* ćuṁ *suck in air,* Wk ʒam *suck;* Ph ćuqʷ- *suck,* Cc ćuukʷat *suck.*

-ч̓aw *inside.* Cq -ч̓u? *contain, having inside,* kuч̓iiyuu *inside,* W -ćaw *inside container.* (Wkh -ćw-a, Wn -ću·).

ʒit- *split, hew.* Cq citaч-aa?at *make canoe,* Wk ʒt-a, ćt-a *split.* Also cp. Ph sч̓, sẏ́ *split,* Wkn sit- *split,* sitχ- *torn;* Ik saq́ *split,* saχʷ *split wood.*

culqʷ-aa *warm.* Cc cukʷa, Wh ćlqʷa.

ʒik- *rub.* Ph ciч-, Wk ʒk-.

ćaxʷ-, ćawa(xʷ)- *stab, spear, punch.* Ir ćeḱʷ *poke* (perhaps xʷ glottalized to ḱʷ), T ćk *thrust* (< ćkʷ or ćḱʷ), Wnd ćaxʷ- to *spear,* Wk ćxʷ- *stab;* Ik cu? *strike with fist,* Ir cuẇ- *punch,* Wk cuxʷ-a *adze off fine chips,* Wn ćuxʷ- *stab,* ćuqʷ-aa *punch.* Also perhaps cp. Ir ćam *nearly pointed* (like lemon), Wk ćm- *point with finger,* Ik ćoq́ʷ *point with finger.*

ч̓i(q)- *throw.* T cq́- *throw,* Cc cq- *strike,* Cq ч̓iчu *throw,* Wh ćq-a *throw,* Wn ćik- *throw at, hit with blunt instrument* (perhaps fr ćićq-).

ćaq- *earth, sand.* B sqć *sand* (perhaps < ćqs), Ph ćχas *sand,* Cc ća?qćit *dry land,* Cq ćiq́ati *land, sky, weather,* Cq ćiq́aati?iƛ̓ɬ *sand,* Wk ʒqʷ-a *soil, mud,* ćqʷ-a *dust,* Wn ćaḱʷaq- *dirt, dust, mud.*

caaq- *on end.* Ik caq- *sitting, set,* Ir caq- *solid object is upright,* Ik caqʷ- *plant upright,* Wk caq *board on edge,* Wn caq-ak *head down, on end, vertical.*

ćaaq- (ćiiq-) *bark.* Ir ćiqʷ- *inner bark,* Wk caχni?, Whn ćaq- *bark.*

ʒiq- *dig.* B nuciχ, Ph ciqʷ-, Pn θiqʷin, Ik ciq-, Cc caqʷa- *dig,* Wk ćχʷ?alił *dig up,* ʒik-a *dig clams.* Also Wk ʒus-a (< ʒiws-a), Wn ćus-a *dig,* Cc citakslii *dig clams.*

cuqʷ-a *in the hand.* Cq caqʷa- *hold in one's hand,* Wn -cuqʷ-a *in the hand.*

-s *do, make.* Cq -s causative, Wn -s in qʷis *do thus,* -siła *do, act like.*

s- demonstrative. S s- noun prefix, Cq s oblique indefinite article, sa?a *that one* visible near speaker and second person, s *he, it, they,* W s- pronoun base for Wk su *thou, you,* Wn siẏa *I,* suẇa *thou,* siiẇa *you,* -su·k *thou,* -suu *you;* S -s *his, he,* Wk -s *by him.*

-sapi *screen.* Cq sapa? *screen,* Wn -c-sapi *behind a screen.*

-ʃa momentaneous. Cq -ʃ *become,* Wn -sa·p, Wd -sa?p momentaneous causative (-?ap causative).

sa(w)- *swim, float, fly.* T suq *to fly,* Ph sẏ́- *swim,* Ir suḱʷ *float with current,* suxʷ- *fish dives,* Wn sus- *swim.* Also cp. T ?usil *dive,* Ir ?us *person dives.*

-sinta, -ćinta *in water.* C -sina *water,* Wn -sit *in water.* Perhaps also cp. Ir sikʷe? *water,* Ik sixʷ- *pour, spill liquid,* Wk -?sta *in liquid or air,* Cq -ći *water,* Wn-ćita *in water hole.*

sal(p)- *turn.* Ph ćlp *spin,* Ir sel *turn swiftly,* sil *turn, cause dizziness,* sel' *perplex,* Wk slp- *twist* (also xlp-), Wkh sl-a *drill,* slqʷ-a *twist,* Wn suut- *drill* (perhaps < sult-). Perhaps Mosan reconstruction should be sul(p)-.

-saqaw *penis.* Cq -sku, Wk -squ.

-k *belly,* independent form ta-k. B -ank *chest, front of body,* T -nч, P -k, I -nk, Cc iiчii, Wn -?a·чi; Ir sitч *belly,* setч *paunch,* Ph ƛ̓ч *belly,* Cc ąam-aaчit *belly,* W tak- *belly* (Wn taaẏa, Wk tḱi). S independent

forms: Ir si-, se- for s-ya-, s-yaa- with additional demonstrative elements; Ph has replaced ta- by another demonstrative (see ƛa-), and so has Cc (cp. qamuu-qs *neck*). In the suffix form TI -n- may be due to influence of a partly synonymous element, as -aanaqi.

ga(a) interrogative-demonstrative, gaa *give*, ga *arrive*. Ir чс- *hither*, T чuł *that way*, Wkh -k *this visible near me*; Ph ча *and*, чat *with*, Wk ga *this near you*, Wh gaqʷ *this near me*; S ka(n) *where, which* (TPI), Wn ʔaчaq *who*, Wk gn *how many*; T чawł *give*, Ph чał- *give*, Wn kaaʔa *give here* (particle requesting that a thing be handed to one); Ik ч- *toward*, Cq -k *go to a place*, Wk -gʔ- *arrive*.

ka(a) *island*. Ph sɬча, Ik чsunkʷ, Wn ча-ʔak.

kaa *hand*. S kalx *hand* (TPI), Cc чaaʔaʔa *five*.

ƙa *water, river*. Cq ƙać *river*, Wn ʻa-ʔak *water*, Ir ʻatqeleẏ *lake*.

ƙa- *curly*. Cc ʻaamał-ɬiiqʷ *curly headed*, Wk ƙnxʷ-a *curly hair, thick bushes*. Perhaps cp. Ir kʷus *curly* (< kus < kaws).

ƙa(a) *lock door*. Ik ʻep *lock door*, Wk ƙmẏ-a *lock door, bar behind oneself*.

ƙi- *cut, pinch*, ƙaa *gnaw*, ƙaa(χʷ)- *hew*. B ciƙ- *stab*, BI niƙ- *cut*, T ʃaʻ- *cut*, Cq ƙaɬiil *cut*, ƙadaćac *cut a piece from*, W ƙiy- *cut* (Wkh ƙy-, Wnd ʻi-), Wk ƙmƛ-a *to adze*, ƙms-a *to rough out canoe*, ƙiƛ-a *cut grass*; B ƙm-, T ʻk- *bite*, Cq ƙada?pac *press between two things*, Wk ƙp-ała *hold with tongs*, Wn ƙac- *pinch*; Cc ʻaałaa?at *gnaw*, Wk ƙap- *gnaw*; Ir ʻar- *cut flimsy object with shears*, ʻeχ- *peck at hard object*, Cq ƙaxii?iyat *to make a canoe from a log*, Wk ƙaxʷ- *shave*, ƙaχdm *beam, long pole*, Wn ʻaн- *hew*. Also cp. Ir ʻeɬ- *cut off completely*, W git-aa *carve, saw* (Wk gt-a *carve*, Wnd ɥit-aa *saw*).

-ƙaʔays *body*. Cq -ƙis *body*, Wk ƙʔis *in body*. Also cp. Wk -ƙ-n *body*, Wn -ʻ-iч *clothed in*.

ga(y) *at*. Ir ч- *on, attached to but not part of, at a point*, Wk gi- *at*, Wn -чi *at*.

gay *sharpen*. Cq kidiqa, Wk gixa. Also cp. W gaygayaa *tooth*.

ƙay- *close*. Ik ʻi?it *close*, Cc ʻitii- *go near*.

ƙays *bad*. T ʻis *bad, dirty*, Ikr ʻes *bad* (reversal of i-mutation), Wk ƙis *not*, Wn ʻiн- *ghost, supernatural*, ʻiχʷ- *sickly*, ʻiʃχ- *dirty, dark-colored*. Also cp. Wn ʻiɬa- *pitch dark*, Wk ƙltu -ƙakʷ-la *it gets dark*.

ƙa(n)-, ƙaya- *cold*. T ʻt- *ice, cold, freeze*, B sƙl *cold*, Cc ʻamiiʃ- *cold*, Wk ƙna?isa *feel cold*, Wh ƙnis *feel cold*; B ƙaym *snow*, Cq ƙiya- *feel cold*, Cc ʻii-tquł *snow*, Wn ʻitas- *feeling cold*, ʻiʻinik *given to feeling cold*.

kaƙi *blind*. Ik чnm̓qin, Wn чaƙiq-.

gal- *first*. T чlla *forward*, чila *bow of boat*, чlhays *first house in town*; Wk gl-a *first*, gala *first, ancestor*, gola *first*, Wn чaani *at first, for a while, temporarily*. Also cp. Cq qaluuku *first*, Cc quluquut *at first*.

ƙil- *to tie*. C ƙiya- *to tie*, Wk ƙlk-a *to tie string on*. Perhaps also cp. Wn ʻiɬ- *to weave together, twine*.

ƙul- *extinguish*. Ph ƙʷlʻ- *extinguish* (< ƙulƙ-), Wk ƙlq- *extinguish*, ƙlχ-a *fire is out*, Wn ʻuχ- *extinguish*. Also cp. ƙxʷ-a *blow out*.

kar(q)- *shove*. Ir чarq *hang on with arm, deter*, ʻaχʷ- *shove, move to one side*, Wn чaq-, Wd чat- *push, shove*.

kaxxʷ- *quickly*. T чxł (< kxʷł), Wn чaʃxʷ-aa. Also cp. Wh ƙax-a *slip, scoot along*, Wn ʻaʃaa *hurrying*.

-ks *hand*. S -akst *hand*, Wk -xćana *hand* (< -ks-ʔana), Wn -iics *carrying along* (< -iiчs < -iiks).

xa-, χʷaa- *all*. B xs *all*, T xlaqał *all*, xlq̓u *finish*, Cq xabaaʔ *all*, Wh xakiʔ *too much*; Ph χʷaqʷ *all*, Wn нaчat-ak *all*, нa- *fully*, Wd χa- *fully*.

xay *stand*. Ik ʃiɬ *stand* (*one long object*), Cc ʃiis- *stand*.

xan- *spouse*. B xnas *woman*, Ph sʃn *husband*, ʃn-am *marry, have husband*, Cc ʃintuus *virgin, girl*, Wd xaadaʔk *woman*.

xal *turn*. Ik ʃlч *turn around*, Ir ʃelч *move in a circle*, Wk xlp-a *turn around*. Also cp. S xultm *fire drill*.

-kʷ *thou*. Ir kʷ-, -xʷ, Cq -k, Wn -k in -suˑk.

-kʷ future, Cc -kʷii-, Wn -yiik (< -yiikʷ).

-kʷa- *other, separate.* Ph nukʷ *other,* Cc kʷiicaquu- *left,* Wk ʔukʷ- *different,* wʔukʷ *others, several,* Wn -kʷa- *apart, away,* -kʷist- *move away,* kʷist- *different, opposite.*

gʷa- *down.* C kʷu- *down,* Wk gʷa- *down river,* Wn kʷa- *backwards.*

kʷaa- *come.* Ph kʷaxʷɬ *come,* Wn kʷaa *come here.*

-ƙʷu *like, seemingly.* Cq -ku *wonder if it is,* Wn -ƙuk *seemingly,* (R) *resembling.*

ƙʷa(a)- *break, tear.* Cq ƙʷadaq- *tear, break,* Wk ƙʷp-a *break (branches),* Wn ƙʷa- *break in two,* Wk ƙʷap-a *tear fabric.*

kʷa(y)- *rub, sharpen.* C kʷaʔa- *whet, sharpen,* Wk kʷix- *rub,* Wnd kʷi- *whet, sharpen.* Perhaps also cp. Wk gixa *sharpen,* gʷlkʷit *rub body with branches,* Wn kʷiiq-aa *rub self.*

ƙʷaw- *steal.* Cq ƙukut-, Cc ƙʷutaati-, Wn kuuẇił *steal,* ƙu- *catch on hook.* Also cp. Cq ƙupa- *covet, love,* Wn ƙap- *plunder.*

-kʷap *fire.* Ir -kʷp, Cq-kʷaʔ, Wk -sqʷap.

kʷat- *appear.* Cq kʷat-al, Wn kaʎʜ- (dissimilated from kʷatɬχʷ-).

-kʷanu- *hand.* Cc -kʷanu-t *finger,* -inakʷsi *upper part of arm,* Cq -dusqʷay *arm,* Wk ċnkʷ-a *wash hands* (< ċa-nukʷ-a), Wn -ṅuk (R) *hand.* Transposition either in W or C.

kʷaaxʷ *hollow.* Ph ƙʷlχʷ *hollow,* Cq kaxaa *opened,* Wk kʷaxʷ, Wn kuuʜ *hole.*

xʷ demonstrative, -kʷ some kind of variant. Ir xʷe *the here,* xʷi *this,* Cq yixu *this visible non-feminine near speaker* (recorded yiχu but related forms suggest that yixu may be correct), xʷ *that unknown unrelated,* xʷaʔ *unknown related,* Wh -xʷ *this visible near thee*; Cq yiku *this feminine visible near speaker* (k < -k- feminine plus xʷ), Wn ʔaʜkuu *this.*

-q *in canoe.* Cq -qal *canoe mate,* -qas *friend,* Cc -qcil, pl. -aqal *persons in canoe,* Wn -q (R) *traveling in canoe,* -y-iiq *traveling in such a vehicle.*

ga- *louse.* Ik qtaχʷʔ, Cc qapit, W Gay-. (Wkh gin, qina, Wnd qiч-).

qa demonstrative, subordinating conjunction. Ph qas *because.* Wk q- *that* (base for demonstrative), Wn -qa· *that, because* (subordinating conjunction).

ga- *poke, scratch, cut, kill,* gay- *poke, scratch,* ġa- *break,* ġals- *wound,* qał- *quarrel.* Ik ġeʔ *stick, put,* qom *kill, die,* Ph ġaχm *to hurt,* T qs- *scratch,* Ir qes *scratch with nails,* Cc qaláqal *scratch,* Wk ġn- *sew,* qt-ċu *insert needle for knitting,* Wn qa- *poke, puncture,* qat- *cut, slice,* qatqʷ- *amputate,* qam- *trapped,* qaʜ- *die, kill*; Ir ġi- *poke,* ġaẏ *mark, design, write,* Wn qic- *scratch, write,* Wk gecm *claw* (< W gayaac-ma); Ik ġaẇ *break,* Wk ġkʷ *broken paddle* (< W ġa-kʷ), Wn 'aʃ- *get broken, esp. cord*; Cc ġis- *wound, hurt,* Wk ġls- *cut with chisel*; Cq qałaxa- *war,* Wn qał-ak *unfriendly through quarreling,* ġał- *quarreling.* Also Cc ġaqu- *bite,* ġiiġu- *chew,* Wk ġlt-a *cut with chisel,* Wn 'akʷ- *whittle,* 'as- *to adze, hew,* Wk- ġas-a *to notch.*

gaa- *grandparent, grandchild.* S qani *father's mother,* qaya *mother's mother,* Cq qaχulit *grandchild,* Cc qaʔaχuliitis *grandchild,* Wk gagmp *grandfather,* gagas *grandmother,* Wn kaaʔuuc *grandchild* (diminutive symbolism in change from q to k). (T qani, Ir qyna *father's mother,* Ik qene?, Io qqna *grandmother,* Ptp qaya, Ph qy, It qʔza *grandmother*). Possibly same element with diminutive symbolism: B kukpi *grandfather,* Ph чupa *grandfather,* B kikya *grandmother,* Im kkya *grandmother,* Ik ччẏeʔ *mother's mother.*

-qay *head.* S -qin, -qn *head,* Cq -qaʔ *hair,* W -qay *head, summit.* (Wh -qi, Wnd -qi·).

qaya *many.* Cc qiχ, Wk ġi. Also cp. Ph qχł *many,* Cq qaaxayuʔut *very much.* Cp. Mosan ʔaya-.

-qawa *point.* Cc -ƫiiquʔa *point* (cp. -ƫiiqʷ *head*), Wn -quu-, Wd -qaw- *point of land* (-quuʔa, -qawʔa *rocky point*), Wn -quuł *at harpoon point.* Perhaps cp. C -quł *tool, instrument, utensil.*

qaw- *water, drink,* ġaa- *swallow.* S qaw, quʔ *water,* W ġaw- *water*; Ph qaw, Cc quuчi- *drink*; T ġaʔat *throat,* Ik ġam *swallow,* Cc ġawalii *swallow.* (Ilt quʔ, T ƙiw, T Siletz dialect qiw, Ptp qu, P Clallam-

Lummi-Lkungen qu? *water*). Also cp. B qla *drink*, Ph qa?, qal *water*.

qum *head*. Ir q̇m-qn *head*, Ik q̇om-qn *hair on head*, Wn qum̓ic *skull*. Also perhaps cp. Cc χanit, Wd qa atqaat *head*.

Gamukʷ- *bend*. Ph qmukʷ *bend*, Wk Gmxʷ- *bend head*.

qatay *small*. B qi?qti, Cc q̇at̓iin.

qul- *person*. Ir sql-tmxʷ *man*, Ik sqilxʷ *Indian*, Px sqalmxʷ *person*, Wnd quu?as *person*, quuł *slave* (formed with -?as *in the village*, -"ił *in the house*). Wkh q̇akʷ *slave* probably unrelated to Wn quuł, but analyzable as q̇a-kʷ *found*.

Gal- *eye*. S qlm, Wd qali?, Wn qas-, Wkh Gs-. (B qluq̇s, T kał, P qlm).

qilk-a *tired*. Cc q̇iɥii?ii-, Wk qlk-a.

q̇ak- *bite*. Cc q̇aqu-, Wk q̇k-a. Also Wk q̇mkʷ-a *bite off something hard*.

qaaxʷ, qawaxʷ *freeze*. Ph q̇axʷ *freeze*, sq̇axʷ *ice*, Wn quxʷ-aa *freeze*, quux *ice*. Perhaps cp. C χak- *freeze* (Cq xak- *freeze*, xabiic *ice*, Cc χaɥa?a *ice*).

-qχsa *band, bundle, kind*. Ik -aqsn *kind, sort*, -a?qsu *band, family*, Wk -χ-suk, Wn -q-Hsa *bundles*, Wn -sa·Htak *varieties*.

-χ demonstrative ending. S -χ in B t̓aχ *that*, t̓ayχ *this*, Ph taχ *that*, Cq -χ in yiχ *the* (subject article), Wk yχ *that* (object), Wnd -χ in Wn ?uH, Wd ?uχ *he, it*, Wn ?aH, Wd ?aχ- *that*, Wn ?iqH *same*.

χ *continuing*. Cq -χ *continuing, meanwhile*, Wn -q-H *meanwhile*.

-χa interrogative. Cq -χa interrogative calling for yes or no answer, Wn -Ha· interrogative.

χa- *head*. T χlχl, Cc χanit, Wk xums *head*, xuta *seal's head*, Wh hix̌ti *head*.

χaa- *bone*. Px χawʃn, Ph ʃaw? (perhaps diminutive symbolism), Cq qaaχ (perhaps transposition of consonants), Wkh χaq, χaχ *bone*, Wn χaʃ- *whale vertebra*, Wn Haʃi·ɬ- *having bone in throat*.

χa(m)-, χiƛ- *bite*. Ir χem *bite*, χeɬ *gnaw, eat close, graze*, χemc *shave hair*, χelexʷ *tooth*, Wk χmxʷ-?id *chew*; Pn χƛ̓il *bite*, Cq χi?ƛ̓iil *bite*, Cc χiic-quł *tooth*.

χam-, χap- *dry*. Ph χp, Pn χaƛ̓ʷl, Ik χam̓ *dry*, Wk χms- *dry salmon*, Wn hapc *dry*. Perhaps cp. Cc χʷaaq̇u- *to dry*.

χaƛ- *break*. Ph χƛ̓- *break*, Wk χƛ- *break a paddle*.

χala- *scratch*. Cq χalil *to cut*, Cc χalaχal, Wk χlpa, χls- *to scratch*. Also cp. Ph χiƛ̓ʷ- *scratched*, Cq χawaaʃ *to scratch*, Cc χupaa?a- *to carve*, Wk χq- *to comb*.

qʷi-, qʷa- demonstrative-interrogative. Cq qu-, Cc quu?uq *where*, Wn qʷa- *thus, as*, -quu *when, if*, qʷi- *that which*. Also cp. Cq -qu *at*, Cc qaɥi-ca *where is your country?*

q̇ʷa- *wound*, qʷa(a)- *tear*, q̇ʷay- *crush*. Ph q̇ʷał *wounded*, q̇ʷχʷ- *to cut*, Wk q̇ʷɬ-a *to scratch*, Wn 'a-ɥuu *wounded*, 'ee?i *laceration, wound*; Cc qʷaqa- *tear, torn*, qʷayiiqalii *tear to pieces*, Wk qʷap *to tear mat*, qʷƛ̓m *to tear in strips*; Ph q̇ʷic-, Wk q̇ʷiɬ-*crush*.

-qʷaw *together*. Perhaps in C maq̇u-, Wk nqu, baku *meet*, Wn -ɥ-inkʷ *together*.

Gʷal *pitch*. Ph qʷałł *pitchwood*, Wk Gʷlik *gum*.

q̇ʷal-, q̇ʷał- *cook, burn, ashes*. Ph q̇ʷl-, Ir q̇ʷel *cook*, q̇ʷal *burn*, B sq̇ʷałkʷ Ph q̇ʷał *ashes*, Cc q̇ʷałili *cook*, Wk q̇ʷl- *burn to ashes*, q̇uł *boil with hot stones*, q̇ʷalm *ashes*. Also Ph q̇ʷt- *burn*, Ik qʷel'- *cook by fire underground*, Cq qʷała? *broil by covering pot with leaves*; Wk Gʷna, Ir sqʷniɬkʷp *ashes*.

qʷaal-, laaqʷ- *speak, sing*. Ik qʷel *speak, talk*, T qlχ *speak*, Cq -sq̇ʷa *speak a language*, -kʷa? *speak*, W -ilaqʷ- *speak, sing*. (Wk -"laqʷ-a, -"ulaqʷ-a R *speak, sing*, Wn ?iyaqH- *narrating*, -iyaqH R *singing*).

qʷa(χʷ)- *grey*. Ph qʷaχʷ *grey*, Wk qʷχ-a *grey, dusty, flour*. Also Ir qʷuḿ *grey*, qu?ɬ *dust*, quɬ- *dusty*, Ik quɬ *dusty*, Cc q̇ʷiiti-ɬiiqʷ *grey headed*.

χʷa(t)- *cut*. Ik χʷt- *cut, make shorter*, Ir χʷat- *cut in two*, T xɬ- *cut*, Wk χʷt-a, Wn χut- *cut*; Ir χʷaq̇ʷ- *divide, separate*, χʷic *crop hair*, χʷeq̇ʷ- *grind meal*, Ph χʷq̇- *grooved*, χʷlq̇- *split*, χʷaq̇ʷ- *scrape*, Cc χupaa?a- *carve*, Wk χʷlt-a *mark*, χʷlk-i *groove*, χʷaƛ̓-a *cut fish*.

REVIEWS AND NOTES

THE NATURE OF CULTURE. By A. L. Kroeber (University of Chicago Press, 1952. $6.50. viii + 438 pp.).

CULTURE, A CRITICAL REVIEW OF CONCEPTS AND DEFINITIONS. By A. L. Kroeber and Clyde Kluckhohn P-PMAAE 47.1–222 (Harvard University, Cambridge, 1952).

This is neither a review of Kroeber's favorite papers (extending from 1901 to 1951, compiled by Kroeber and interlarded with previously unpublished ancillary essays), nor is it a review of the Kroeber and Kluckhohn book. Instead it is an extended footnote based on the first book—a footnote which should have been included in the second book. The latter comprises a useful treatment of many definitions (largely from 1871 through 1951), slighting only those contributed by the senior author.

The following is a compilation of brief utterances from Kroeber's papers, identified by parenthetic page references to their appearance in *The Nature of Culture*. As compilers, we each read this book independently and, after abstracting the excerpts given below, devised certain rubrics for classifying the utterances excerpted. The rubrics are as follows:

A: Culture as a NATURAL PHENOMENA on the SUPERORGANIC LEVEL of NATURAL HISTORY.

B: ORIGINS (= INVENTIONS), INHERITANCE (= TRANSMISSION through time), and PROGRESS = ACCUMULATION (= CUMULATIVE GROWTH) of culture through HISTORY.

C: PERSONALITY of the INDIVIDUAL and his relationship to SOCIETY.

D: CULTURE AREAS, and DIFFUSION and HYBRIDIZATION of culture.

E: VALUES as a part of culture.

F: PATTERNING and INTEGRATION in the STRUCTURE of culture. (As allophones and morpheme alternants in *linguistics* [= (?) *culture*]? In F. 1, below, denial of the equivalence is implicitly made by explicitly denying the formal unit for *culture*.)

In respect to the nature of culture, statements in the history of anthropology go from implication to explication. Following that 'long wait after Tylor' (32 years after the 1871 definition), and following the drizzle between 1900 and 1919 (six definitions of culture), came the flood—300 definitions altogether (for more formal definitions, half that number) are cited by Kroeber and Kluckhohn. To these 300 definitions, most of the following utterances certainly belong.

A: Culture as NATURAL PHENOMENA on the SUPERORGANIC LEVEL of NATURAL HISTORY.

A.1 "Primary, it seems to me, is the recognition of culture as a 'level' or 'order' or 'emergent' of natural phenomena . . ." (4).

A.2 "Finally, while culture is essentially limited to man and is the only order of phenomena so limited, it is as much a part of nature as any other phenomenal order or level . . ." (10); A.3 ". . . but in civilization man has something that no animal has." (27).

A.4 "But heredity does not maintain, and has not maintained, because it cannot maintain, one particle of civilization which is the specifically human thing." (31); A.5 "A new factor has arisen which was to work out its own independent consequences, slowly and of little apparent import at first, but gathering weight, and dignity, and influence; a factor that had passed beyond natural selection, that was no longer wholly dependent on any agency of organic evolution, and that, however rocked and swayed by the oscillations of the heredity that underlay it, nevertheless floated unimmersibly upon it." (49); A.6 "The mind and the body are but facets of the same organic material or activity; the social substance—or unsubstantial fabric, if one prefers the phrase—the thing that we call

civilization, transcends them for all its being rooted in life." (51).

A.7 "... in culture the tremendously conservative force of organic heredity is not operative; at any rate, it is obviously not the direct or immediately operative factor." (86); A.8 "Moreover, widely divergent cultures can and do hybridize; organisms, only within very narrow limits of relationship and descent." (86); A.9 "Even its basic patterns can in some degree blend, which is contrary to all experience in the merely organic realm, where patterns are virtually irreversible in proportion as they are fundamental." (86).

A.10 "Qualities of culture are: (1) It is transmitted and continued not by the genetic mechanism of heredity but by interconditioning of zygotes. (2) Whatever its origins in or through individuals, culture quickly tends to become supra-personal and anonymous. (3) It falls into patterns, or regularities of form and style and significance. (4) It embodies values, which may be formulated (overtly, as mores) or felt (implicitly, as in folkways) by the society carrying the culture, and which it is part of the business of the anthropologist to characterize and define." (104).

A.11 "Like language, culture exists only in and through human individuals and their psychosomatic properties; and, like language, it acquires a certain larger intelligibility and systematic sigificance in the degree that it takes these persons for granted and proceeds to investigate the interrelations of superpersonal forms of culture." (115).

A.12 "... it is cultural phenomena ... that constitutes the very top level of our hierarchy." (124); A.13 "Even suborganic influences on culture must be admitted: catastrophes that wipe out one society ..." (132).

B: ORIGINS (= INVENTIONS), INHERITANCE (= TRANSMISSION through time), and ACCUMULATION (= CUMULATIVE GROWTH) of culture through HISTORY.

B.1 "... it is of the nature of culture to be heavily conditioned by its own cumulative past ..." (4); B.2 "One other thing is clear. Much more of the culture native to any given group is the product not of the living population but of its preceding generations." (10).

B.3 "There must evidently be a broad group of phenomena in human experience that bear some resemblance to the heredity transmission of the acquired ... [the broad group of] phenomena are the exceedingly common ones of social inheritance or cultural transmission and growth ... The source of social inheritance is not restricted to parents and actual ancestors ..." (20).

B.4 "The bird renounced a pair of hands to get his wings ... [whereas] the development of civilization is clearly one of accumulation ..." (25).

B.5 "Civilization is only the sum total of the products of a group of organically shaped minds. The concrete effect of each individual upon civilization is determined by civilization itself." (48).

B.6 " 'The origin' of any movement or institution, in the strict sense of the word, is simply not a historically valid conception." (80).

B.7 "A culture is always, so far as we can judge, highly composite in the origin of its constituent materials." (93).

B.8 "The great difference between organic and cultural phylogeny remains of course in the mechanism of perpetuation or transmission ..." (94); B.9 "... mechanism of the change which culture is always tending to undergo." (133); B.10 "Moreover, every existing culture is always heavily determined by previous culture ..." (149).

B.11 "... culture proper ... religion, philosophy, and all the arts ... tend to replace each other instead of building up cumulatively." (155); B.12 "It is in their reality ingredients [= finding out about, mastering, and directing nature] that civilizations chiefly show the quality of accumulativeness ..." (402).

B.13 "In the grand sweep of cultural growth, accordingly, successful technological and political developments, which characterize the more complex civilizations, are secondary and late products reared upon social forms or devices centering immemorially around kinship." (225).

B.14 "... even though we fully accept the modern critical attitude toward the old notion of progress, there can be no doubt that there has occurred, since Paleolithic times, a great deal of some kind of progress in culture, and a fairly continuous progress at that." (318).

B.15 "Cultures that consistently maintain a resistive or regretful attitude toward all manifestations of psychopathology may be rated as having progressed beyond those that tend to induce certain kinds of psychopathology by rewarding them and thereby strengthening a vicious circle of cultural non-reality and individual abnormality." (319).

B.16 "... the very concept of a climax ... involves not only the focus of an area but also a culmination in time." (343); B.17 "On the whole, accordingly it can be assumed that culture climaxes are not mushroom growths; though their finest flowerings are evidently brief, and the introduction of a radically new subsistance mechanism ... may occasionally cause a rapid growth." (339).

B.18 "... both in art and in degree of systematization the more outstanding American cultures seem to conform to a general pattern of culture growth, the outlines of which gleam through the known historic civilizations." (343); B.19 "Wherever one of these [historic civilizations] attained a clearly recognizable culmination, this seems to have corresponded essentially with a period of successful organization of culture content ..." (340); B.20 "In fact, culminant civilizations as a whole can be seen as having followed the same general course." (409).

B.21 "The more creative activities of civilizations thus are imbued with change in their very nature." (403); B.22 "... a true style does not travel so and so far and then retrace its steps, nor does it suddenly go off in a random new direction. The tendency is very strong for its direction not only to persevere up to a culmination, but to be irreversible." (403–4); B.23 "Civilizations are like life histories in that they are normally marked by a developmental flow, and by the fact that they are not reversible into a series of beats..." (408).

C: PERSONALITY of the INDIVIDUAL and his relationship to SOCIETY.

C.1 "One or more individuals necessarily enter each situation, but only as a cog in the mechanism of intercultural transfer, stimulus, and creativity." (8); C.2 "Knowing the civilization of an age and a land, we can then substantially affirm that its distinctive discoveries, in this or that field of activity, were not directly contingent upon the personality of the actual inventors that graced the period, but would have been made without them ..." (45).

C.3 "What the causes are which operate in culture obviously depends on what culture is ..." (107); C.4 "The locus or residence of culture ... is obviously in human beings ..." (107); C.5 "For my part, I am ready to concede that culture exists only in persons in the sense that it resides, has its locus, only in them. Incidentally, culture also exists then in physiological reactions, in biochemical ones, and beyond, in physiocochemical ones." (113).

C.6 "... culture by definition includes, or at least presupposes, society." (118); C.7 "We must be ready ... to ignore and suppress the individual, who from the angle of understanding of culture is perhaps more often irrelevant and distracting than helpful." (127).

C.8 "... it is the trend, the antecedents, the moment, that unite to force the invention; within its setting it has become, as it were, inevitable; which person is the vehicle of discovery matters little to the

society and to the growth of the culture." (128).

C.9 "The efficient causes of cultural phenomena are the actions or behavior of men . . ." (132); C.10 "So it is clear that, while human beings are always the *immediate* causes of cultural events, these human causes are themselves the result of antecedent culture situations. These intermediaries [human beings carrying the culture] are concerned, first of all, with relieving their own tensions and achieving their personal gratification, but in so doing they also transmit, and to some degree modify the culture . . ." (132).

C.11 ". . . large segments of culture begin to operate, to come into being, only after the primal needs have been satisfied . . ." (136).

C.12 "The relation of culture and the psyche of course remains a basic problem." (148); C.13 "The contention that personality will really give a new understanding of culture seems doubtful. There can be no doubt of an important interrelationship between culture and personality . . ." (149).

C.14 "All culture has human society as its precondition, and conversely all human society is accompanied by culture as its product but also as its own further precondition." (162); C.15 ". . . conceptually cultural and social phenomena are as thoroughly distinct as they regularly coexist in man."

D: CULTURE AREAS and DIFFUSION and HYBRIDIZATION of culture.

D.1 "Likewise, the majority of the contents of any culture has normally been been developed by other groups and introduced and accepted." (10).

D.2 "Cultures especially in their cyclic aspect, have sometimes been compared to organisms. They are however obvious composites: more or less fused aggregates of elements of various origins, ancient and recent, native and foreign." (57). D.3 "Cultural growths, both partial and total, can and do interpenetrate and merge one with the other even when they have become very different." (94).

D.4 ". . . a culture climax or culmination may be regarded as the point from which the greatest radiation of culture material has taken place in the area." (339); D.5 "But it is always necessary to remember that as a culture becomes richer, it also tends to become more highly organized, and in proportion as its organization grows, so does its capacity to assimilate and place new material, whether this be produced within or imported from without . . . high intensity cultures are the most absorptive as well as the most productive." (339).

D.6 "In some cases it happens that diffusion is definitely piecemeal . . ." (344).

D.7 ". . . it is the idea of the complex or system which is accepted, but it remains for the culture to develop a new content." (344); D.8 "With idea diffusion the situation is different, because while systems or complexes in two or more cultures may correspond in functional effect, the specific items of cultural content, upon which historians ordinarily rely in proving connection, are likely to be few or even wholly absent." (344.)

D.9 "It is also well to remember that while diffussion in space, like transmission in time, is an exceedingly common process, it is not something that operates automatically." (357).

E: VALUES as a part of culture.

E.1 "That values constitute an essential part of culture is coming to be increasingly accepted." (5); E.2 "Values, along with the cultural forms to which they attach, can obviously be described . . ." (129).

E.3 "This essay maintains the proposition that the study of values is a proper and necessary part of the study of culture, viewed as an existing part of nature." (136); E.4 "What we have left on elimination of values is an arid roster of cultural traits or cultural events . . ." (137).

F: PATTERNING and INTEGRATION in the STRUCTURE of culture.

F.1 "We may be reasonably confident that nothing corresponding to allomorphic unit-characters or genes, to protons or neutrons, even to atoms or molecules, is likely to be discovered on the level of culture." (125).

F.2 "Language is the part of culture which particularly lends itself to pattern recognition . . . basic pattern has been used much less, and has been formulated less clearly, in anthropology than in biology." (86).

F.3 "Cultural patterns therefore tend to be short-lived . . ." (86).

F.4 "However, granted the relative mutability, plasticity, and ultimate fusibility of all patterns in human history, there remains no doubt that there are cultural patterns which are more basic or primary and on the whole older, and others which are more superficial, secondary, and transitory." (86); F.5 "Now we have done enough analysis in Anthropology to have good reason to believe that the recurrent phenomena which we loosely called feudalism, clans, cross-cousin marriage, etc., have polygenetic origins; and therewith the inference is near that they are merely derivative and not basic patterns . . .With a valid basic pattern, its various manifestations show a point-for-point correspondence . . . Culture history is no doubt more difficult; but there is every reason to believe that the [point-for-point pattern] principle applies." (89–90); F.6 "These examples [plow agriculture, writing, etc.] . . . may suffice to illustrate what is meant by 'fundamental patterns of culture.' " (92); F.7 "The basic patterns referred to in the present essay are the more pervasive and permanent forms assumed by a specific mass of cultural content . . ." (92).

F.8 "The consequence [of culture growth] is that, even with the utmost degree of segregation and shelter, the pattern systems of culture must be enormously brief in their expectation of duration as compared with patterned organic development." (94).

F.9 "In other words, cultural forms or patterns gain in intelligibility as they are set in relation to other cultural patterns . . . I am convinced that this primacy of patterns and pattern relation must be accepted in our intellectual operations with cultural data, possibly not forever . . ." (114).

F.10 "Culture as a whole is more manifold and less channeled than its part, language." (115).

F.11 "Cultures tend toward integration and, in the main, achieve some degree of it, though never total integration." (131); F.12 ". . . the total outcome is not utter cultural randomness . . ." (132); F.13 "All cultural phenomena are invariably related to certain other cultural phenomena . . ." (132).

F.14 "Its extraordinary variability or plasticity is one of the most marked properties of culture." (131).

F.15 "The essential characteristic things about a culture are its forms and patterns . . ." (136); F.16 "The forms of any culture must be described—can be appraised, one might say—only in terms of their relation to the total pattern-system of that culture. The pattern-system in its turn needs portrayal in terms of its total functioning and products." (137); F.17 "I propose therefore to substitute a distinction between patterns . . . which are relatively primary, stable, and adhered to with unconscious conservatism . . . and such as are relatively secondary, unstable . . ." (218).

F.18 "Traits having to do with what we may call formal social organization . . . form part of the secondary patterns of culture . . . They are in a sense epiphenomena to other, underlying phenomena . . . Instead of considering the clan, moiety, totem, or formal unilateral group as primary in social structure and function, the present view conceives them as secondary and often unstable embroideries on the primary patterns of group residence and subsistance associa-

tions." (217); F.19 "Society is structured first of all on the basis of kinship . . ." (220). F.20 "The point is that, once the interests of a culture become directed toward social form and structure, it may make the most unexpected combinations of possible social forms."

The above statements were classified into their separate rubrics independently by the two compilers. However, in a few cases there was disagreement as to the classification of certain excerpts. These are listed below, preceded by letters which represent the rubrics to which they were assigned, separately, by the compilers.

A and **B** "Degeneration or simplification is a factor in cultural as well as natural history." (60).

A and **D** "Certainly the larger faunal and floral regions, like the Palaearctic, neotropical, Indo-Oriental, Ethiopian, Australo-Papuan, correspond strikingly, even in part to geographic coincidence, with the generally accepted major cultural regions [No. 5, §1]; and there are parallels in retardation, specialization, and expansive productivity of new forms. All this suggests that the nearest counterpart of the organic species in the field of culture is perhaps the cultural trait or trait cluster but not the culture entity or whole culture." (93).

B and **C** "That the making of inventions is normally multiple and simultaneous is by now a fairly well-established fact." (128).

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THE 'ESKIMO' NAME

The name 'Eskimo' or, in the older French spelling, 'Esquimaux', by which the Innuit people are designated since centuries in the Western tradition, is commonly explained as an adaptation of some Indian, presumably Algonquian, denomination meaning 'eaters of raw flesh' and reflecting the well-known scorn of the Indians toward their Eskimo neighbours. This derivation has been recently rejected by W. Thalbitzer for historical reasons. He argues that in the oldest available records, those of the French Jesuits written in the first years of the 17th century, the name appears as Excomminquois or Excomminqui, and that this should be the original form. Here is the essential part of his note:

"Originally the form of the name, as found in the Jesuit Relations, was Excomminquois or Excomminqui. Escoumins is the name of a village in the interior of the country, on the North side of the St. Lawrence Gulf. The name Excomminqui was first used by the French Jesuits, who in 1605 began missionary work particularly among the Algonkin Indians, their friendly allies.[1] . . . The missionary invented the name of Excomminquois (pronounced Excomminqué) for their pagan neighbors to the North-East, and this name was, by degrees, altered to Escoumains and Esquimaux. The original meaning of the name is probably connected with the fact that the hostile pagans were interdicted from the church and the sacrament, Latin excommunicati. Therefore the etymology of Eskimo is not 'eaters of raw meat', but 'the excommunicated ones'".[2]

We may remark in the first place that the forms Excomminqui, Excomminquois *excommunicated* were by no means unknown. They are duly registered in what is still probably the most complete list of variant forms of the Eskimo name, at the end of the article 'Eskimo' of the Handbook of American Indians, although they are explained as transcriptions of Indian names: "The name Eskimo (in the form Excomminquois) seems to have been first given by Biard in 1611. It is said to come from the Abnaki Esquimantsic, or from Ashkimeq, the Chippewa equivalent, signifying 'eaters of raw

[1] Relations des Jésuites . . . de la Nouvelle-France, années 1611 à 1672, I, p. 7–9 (1858).

[2] W. Thalbitzer, AA 52.564 (1950).

flesh' ".[3] This statement is repeated, in almost the same words, by P. Radin and L. H. Gray in the article 'Eskimo' of the Encyclopaedia of Religion and Ethics.[4]

Nor can it be said that the meaning of Excomminqui has been overlooked. It is worth quoting here, in its original Latin text, as written in 1611 by the Jesuit Father Biard, the passage referred to:

"Oram sinus fluminisque tenent Aquilonem versus Excomminqui, sive, ut vulgus indigetat, Excommunicati. Fera gens est, et ut dicitur Anthropophaga, quanquam et hi olim satis diu pacifice cum Gallis agitarunt, nunc irreconciliabiles cum his inimicitias exercent." In Thwaites' translation: "The shores of the [St. Lawrence] gulf and the rivers are occupied toward the North by the Excomminqui, or, as they are commonly called, the Excommunicated. This tribe is very savage, and, it is said, is addicted to Cannibalism; although once in very peaceful relations with the French for a considerable length of time, it is now on a footing of irreconciliable enmity."[5] In a note to this passage, Thwaites mentions the usual explanation of the name Eskimo and adds: "They were probably dubbed 'Excommunicated' in Biard's time, because of the marked hostility to them of all the other savage tribes in Canada; and the French early joined the latter in opposing them."[6] So Thwaites considered the form Excomminqui as a mere dubbing of the Indian designation, whereas Thalbitzer claims it to be the original form from which Esquimaux (Eskimo) was derived by alteration.

What can we learn from these forms, French Excomminquois and Latin Excomminqui? As a French form of 1605, Excomminquois looks like a deliberate archaism. We find indeed such forms as escomminquié, escomenchié *excommunicated* in Old French, but they were soon superseded by excommunié which had already prevailed since the middle of the 16th century. The use of Excomminquois in the Jesuit Relations could hardly be considered as genuine in 1605. Besides it is strange that Jesuits should have called 'Excommunicated' the very people they were given mission to convert. Could they even think of 'excommunicating' those who had not yet been admitted into the Church?

The history of the form raises also difficulty. If the then understandable name Excomminquois in 1605 is really the original name, one wonders how it could have been transformed into 'Esquimaux' less than three decades later, since the 'Esquimaux' are mentioned as settled in Labrador as early as 1632 on the map published by Champlain in the relation of his voyage to New France.[7] Apparently all memory of 'Excomminquois' had already vanished, and when later Charlevoix attempted to explain the name of the Labrador 'Eskimaux' (that is his spelling) he was so completely unaware of the previous French form that, having discussed the matter with old missionaries, he concluded: "The origin of their name is not certain. It is very likely, however, that it comes from the Abenaqui word Esquimantsic which means 'eaters of raw flesh'. Eskimaux are indeed the only savages we know who eat raw flesh, although they have also the use of cooking it or drying it in the sun."[8]

Nevertheless all these objections would have to be dismissed in view of the fact that 'Excomminquois' appears in 1605, at an earlier date than 'Esquimaux'. But is that

[3] Handbook of American Indians BAE-B 30 1.434,436 (1907).

[4] ERE 5.392.

[5] R. G. Thwaites, The Jesuit Relations and Allied Documents, 2.66 (1896).

[6] Thwaites, ibid. 293, n. 10.

[7] Champlain, Les Voyages de la Nouvelle France occidentale, dicte Canada (ed. 1632) on the map, but not in the narrative. The first edition issued in 1613 bears this mention on the map for the Labrador region: "L'auteur n'a point encore reconnu cette côte."

[8] Translated by me from the original narrative of Charlevoix, Journal d'un voyage fait . . . dans l'Amérique Septentrionale, 5.262 (1744).

really the very first occurrence of the name?

There is a more ancient mention of the Eskimo people which, curiously enough, has passed completely unnoticed hitherto. We find the name as early as 1584 in Richard Hakluyt's Discourse on Western Planting. It must be remembered that this writing of the famous English geographer remained manuscript and was kept for nearly three centuries in private collections, until it was discovered and published in 1877.[9] It was originally written for the Queen and has been described as "a treatise exhibiting, systematically and elaborately, the religious, political and commercial advantages to be derived by England from the attempted colonization of America."[10] For stressing the economic advantages of the 'planting' he advocates, Hakluyt puts forward this argument, "amonge other meanes to encrease her Majesties customes":

"What shoulde I speake of the customes of the great multitudes of course clothes, Welshe frise, and Irishe ruggs, that may be uttered in the more northerly partes of the lande amonge the Esquimawes of the Graunde Bay, and amonge them of Canada, Saguynay, and Hochelaga, which are subject to sharpe and nippinge winters, albeit their somers be hotter moch then oures."[11]

As far as I can see, this evidence is brought here for the first time into the discussion.[12] It derives its importance first from its date, which is quite certain, and from its author's acquaintance with all the previous records of the explorations made in America. So the question arises as to Hakluyt's source. One would think of Frobisher, who is mentioned at the beginning of the Discourse, along with Cartier, Cabot and other explorers. George Best's account of Frobisher's expeditions describes indeed vividly the native population of Labrador and leaves no doubt as to their being the Innuit people,[13] but no ethnic name is assigned to them. Similarly in Cartier's and Cabot's relations. So we are reduced to surmising that Hakluyt had the name either from some unknown previous record or maybe from a verbal account given him by a member of the Frobisher expedition.

At any rate Hakluyt's testimony provides us with what may be safely enough deemed as the oldest mention of the Eskimo name, under the form 'Esquimawes', dated 1584. Consequently it cannot be maintained any longer that we have to start from Biard's 'Excomminquois' nor that 'Excomminquois' *excommunicated* is the original form evolved into 'Eskimo'. It appears now that 'Excomminquois' was in 1605 a learned reinterpretation of a local designation in use at least twenty years earlier. So Hakluyt's form 'Esquimawes' warrants anew the traditional designation and shows that it goes as far back as the last fourth of the 16th century, towards the very beginning of the exploration of Labrador.

And this might suggest a fresh re-examination of the Indian forms alleged as basis of the Western denomination. It should be possible today to ascertain which of the many forms quoted hitherto is most likely the original one. Is it Abenaki eskimantsik *eaters of raw flesh*? or Chippewa ashkimeq? or Cree wiyaskimowok *eaters of raw flesh*? or Cree ayaskimewok *those who do things in*

[9] Documentary History of the State of Maine, Vol. II containing a Discourse on Western Planting written in the year 1584 by Richard Hakluyt, with a Preface and an Introduction by Leonard Woods, edited with notes in the Appendix by Charles Dean. Cambridge 1877. A new edition has been provided by E. G. R. Taylor, The original Writings & Correspondance of the two Richard Hakluyts (Hakluyt Society. 2nd Series n° 77). London 1935, vol. II.

[10] Preface to the Cambridge edition, p. XXI.

[11] Discourse, ch. 13 (Cambridge ed. p. 88; London ed. II. 269).

[12] W. G. Gosling, Labrador 156,166 (1910) is the only author I have found who refers to Hakluyt.

[13] Frobisher's Three Voyages, ed. R. Collinson p. 281 sq. (1867).

secrecy, the deceitful?[14] Linguists equipped with a knowledge of Algonquian languages might be able to provide an answer.

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Additions to Croft's Six Decades of Nahuatl

When checking the entries of this very useful survey[1](IJAL 19.57–73, 1953) against my own bibliographical file, I noticed a few omissions in Croft's list, some of them rather important. In alphabetical order they are as follows:

(1) "Unos annales historicos de la nacion mexicana." Manuscrit mexicain no. 22. Liber in lingua nahuatl manuscriptus . . . , ut est conservatus in Bibliotheca Nationis Gallicæ Parisiensi . . . ed. Ernst Mengin. Havniæ, Munksgaard (1945). 128 pp. (Corpus codicum Americanorum medii aevi, v. 2)./Facsimile edition./

(2) ——. Die Manuscrits mexicains Nr. 22 und 22bis der Bibliothèque Nationale de Paris. Ubersetzt und erläutert von Ernst Mengin. I. Die Handschrift nebst Übersetzung. Baessler-Archiv 22.69–168 (1939). II. Der Kommentar. ibid. 23.115–39 (1940).

(3) Diferentes historias originales de los reynos de Culhuacan, y Mexico, y de otras provincias, el autor de ellas dicho Don Domingo Chimalpahin. Manuscrit mexicain no. 74 . . . in Bibliotheca Nationis Galicæ Parisiensi . . . ed. Ernst Mengin. Havniæ, Munksgaard (1949–51). 3 v. (Corpus codicum Americanorum medii aevi, v. 3)./Facsimile edition./

(4) García Conde, Angel. Fonología náhuatl. IL 1.258–65 (1933).

(5) Historia Tolteca-Chichimeca. Liber in lingua nahuatl manuscriptus . . . , ut est conservatus in Biblitheca Nationis Gallicæ Parisiensi sub numeris XLVI-LVIII^{bis} . . . ed. Ernst Mengin. Havniæ, Munksgaard (1942). 144 pp. (Corpus codicum Americanorum medii aevi, v. 1). /Facsimile edition./

(6) Höltker, Georg. Dvandvaähnliche Wortkuppelungen im Aztekischen. Wiener Beiträge zur Kulturgeschichte und Linguistik 1.349–58 (1930).

(7) ——. Einige Metaphern im Aztekischen des P. Sahaguns. Anthropos 27.249–59 (1932).

/Le Grasserie should be La Grasserie and entered before Lasso de la Vega./

(8) Lehmann, Walter. Sterbende Götter und christliche Heilbotschaft. Wechselreden indianischer Vornehmer und spanischer Glaubensapostel in Mexiko 1524. "Colloquios y doctrina christiana" des Fray Bernardino de Sahagún aus dem Jahre 1564. Spanischer und mexikanischer Text mit deutscher Ubersetzung von . . . Aus dem Nachlass hrsg. von Gerdt Kutscher. Stuttgart, Kohlhammer (1949). 134 pp. (Quellenwerke zur alten Geschichte Amerikas, v. 3).

(9) ——. Ein Tolteken-Klagegesang. Festschrift Eduard Seler. Stuttgart, Strecker u. Schröder (1922), pp. 281–319.

(10) ——. Zentralamerika. I. Die Sprachen Zentral-Amerikas in ihren Beziehungen zu einander und zu Süd-Amerika und Mexiko. Berlin, D. Reimer (1920), pp. 978–1090.

(11) Luna Cárdenas, Juan. Tratado de etimologías de la lengua aztekatl. México, D. F., Editado por u. tl. i. Aztekatl (1950). 106 pp.

(12) Die mexikanische Bilderhandschrift Historia Tolteca Chichimeca. Die Manuskripte 46–58bis der Nationalbibliothek in Paris. Ubersetzt und erläutert von K. Th. Preuss und E. Mengin. I. Die Bilderschrift nebst Ubersetzung. Baessler-Archiv Beiheft 9 (1937). 104 pp. II. Der Kommentar. Baessler-Archiv 21.1–66 (1938).

(13) Preuss, Konrad Theodor. Die Gestalt des Morgensterns nach Textaufnahmen bei den Mexicano im Staate Durango. ICA-P 21:2.458–71 (1925).

[14] The last two forms are given by Petitot, Vocabulaire Français-Esquimau IX-XI (1876).

(14) Romero, J. A. Contribución a la biblioteca azteca. IL 1.312–19 (1934).

(15) Schultze, Leonhard. Wahrsagerei, Himmelskunde und Kalender der alten Azteken. (Historia general de las cosas de Nueva España.) Aus dem aztekischen Urtext Bernardino de Sahaguns übersetzt und erläutert. Stuttgart, Kohlhammer (1950). 400 pp. (Quellenwerke zur alten Geschichte Amerikas, v. 4).

(16) Schoembs, Jakob. Aztekische Schriftsprache. Grammatik (mit Lautlehre), Text und Glossar. Heidelberg, Carl Winter (1949). 212 pp.

(17) Seler, Eduard. Kleinere mexikanische Texte. Fr. Bernardino de Sahagun, Ms. Acad. de la historia, f. 84 (Madrid). Deutsch-mexikanische Rundschau 1.30–31 (1919).

(18)——.Die religiösen Gesänge der alten Mexikaner. Gesammelte Abhandlungen 2.959–1107 (1904).

(19) Tibon, G. Le nom mexicain du dindon et ses rapports avec la mythologie nahuatl. ICA-P 28.529–47 (1947).

(20) Velázquez. P. Pastorela de viejitos. Tl 2.3213–67 (1948).

(21) Versos en dialecto mexicano. IL 4.103–04 (1937).

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Orbis; Bulletin International de Documentation Linguistique. Centre international de dialectologie générale près l'université catholique de Louvain, Vol. 1, no. 1, pp. 1–326, 1952.

Linguists should welcome the appearance of Orbis, a journal primarily concerned with the study of dialects. Each new journal devoted to linguistics not only encourages more writing for publication; it testifies to the demand for more organs of publication, to an increase in productive scholarship which should hasten the answering of old questions and the asking of new ones.

Orbis owes its inception to Sever Pop, director of the first linguistic atlas of Rumania, now living in Belgium. With some help from the Permanent International Committee for Linguistics, from Unesco, and from the Catholic University of Louvain, he has devoted the last few years to summarizing previous dialect investigations and to providing opportunities for students of dialect—regardless of nationality—to exchange information about their projects. First came his two-volume survey: La Dialectologie: Aperçu historique et méthodes d'enquêtes linguistiques (Louvain, 1950); then the establishment of the international center for dialect study at Louvain; and now appears Orbis, as the journal of the international center.

This first issue is obviously experimental; the reactions of linguists will determine the makeup of future issues. Almost certainly the next issue will contain fewer but longer articles than this one, which lists 56 contributions, plus general information about the magazine and the Center for Dialect Study, and bibliographical and biographical notes about the contributors. Of these articles and notes, 23 are concerned with a 'worldwide' investigation of the language of women, 5 with 'linguistic atlases', 4 with 'linguistic investigations', 9 with 'linguistic problems', 4 with 'chronicles of dialect study', 5 with 'centers of dialect study and phonetics'; one is a reprint and 5 are portraits of eminent scholars. The assignment of contributions to particular sections seems to have been somewhat arbitrary: thus the study of Slavic languages in North America (109–12) is classified as an 'atlas', the study of the Catalan dialect of Castellon (116–9) an 'investigation'; the study of Alsatian dialects (185–92) a 'chronicle', that of Argentine dialects (223–7) a 'center'. Admitting that subject classifications are not easy, one can nevertheless suggest that the editors might simplify the arrangement of the table of contents. The journal Language, for instance, has a well established traditional order; Trager's bibliographical classification (Studies in Linguistics 3.54–108; 4.1–50) should provide for cross-references.

The 56 contributions represent 46 authors; two are joint articles, while five authors appear twice, and one, Willem Grootaers, six times. About half the issue is devoted to dialect problems in Romance languages; Germanic languages seem to have disproportionately little treatment. Similarly, 29 of the authors, including two Belgians, are from Romance-speaking countries; seven, including one Transylvanian German, are originally from Rumania, though none now live there. Advance notices indicate that future issues will have a smaller proportion devoted to Romance, as more scholars become acquainted with the new journal.

This issue indicates that Orbis will be very useful in exchanging information between students engaged in dialect research. It is good to know that competent scholars are investigating the dialects of Finland, Czechoslovakia, and Rumania. Bělič's survey of work in Czechoslovakia since 1934 (193–209)—to me, the most interesting article in this issue—shows a rare appreciation of the problem of transitional dialects, as affecting the delineation of the areas in which Czech, Slovak, Polish, and Ukranian are spoken; it is evident that scholars in Eastern Europe are doing interesting dialect research, about which Americans and Western Europeans need to know more. Hakulinen's account of the progress of the Finnish dialect dictionary (120–5) should deflate any false ethnocentric pride based on notions that American wealth will bring us scientific preeminence (at the Olympic games of 1920, Nurmi and other Finnish runners more spectacularly, but no more convincingly, punctured the myth of our athletic invincibility). While American scholars have spent two generations without even beginning systematic work on a dialect dictionary, while publication of our Linguistic Atlas has been delayed for lack of funds and field work not even begun in some regions, Finland has supported a staff of editors and field workers for many years: leaving out preliminary investigations, nationwide investigations of specialized lexical material, and final field checking, this relatively small country has provided adequate salaries (and tax-exempt ones) to keep 23 full-time investigators in the field for periods of three to four years apiece. Rudnyčkyj's report on the Slavic Linguistic Atlas of Canada and the USA (109–12) will come as a welcome surprise to many American linguists; since 1942, when Trager abandoned his study of American Slavic to concentrate on work for the armed services, many have feared that this group of speech-islands would be wiped out before they could be adequately investigated.

Here and there one may wonder at the omission of data which a writer might have taken into account. For example, should not a discussion of palatalization in Rumanian take into account the possibility that Rumanian might have borrowed this structural feature from Russian or some other Slavic language? Has Rudnyčkyj not heard of Trager's project? Does he plan to ignore the long-established Czech colony in Texas? Why does he not report, as Trager did orally, the existence of a Slavic koiné, with a simplified morphology, among the younger generation in industrial communities where the older generation speak several Slavic languages? But such minor questions no more invalidate the journal than do the occasional typographical errors; it is a formidable task to elicit articles from scholars scattered from Minnesota to Moravia, to impose some sort of stylistic order on nearly fifty individualistic contributors, and to edit and print copy in five languages. The wonder is that omissions and errors are so few.

On the other hand the largest section of this issue, the symposium on the language of women, seems to be relatively unfruitful. Most of it deals with the usefulness of women as informants within dialects of European languages; if the conclusion seems to be 'it all depends', that is no more than an experienced field worker might suspect.

The extent to which a given field worker is able to use a given informant depends on many things: the personality and interests of the field worker, the personality and background (including education) of the informant, and the kind of questionnaire—and the questionnaire will in turn depend on the aims of the investigation and the culture within which the investigation is being conducted. Taking all these things into account, perhaps sometimes men are better informants than women, and vice versa; but, for most European languages, the sex of the informant is, in itself, of minor importance. Significant differences seem to arise out of cultural situations rather than purely linguistic ones, as we may observe upon examining several types of dialect surveys.

The Linguistic Atlas of the United States and Canada, with which I am most familiar, is designed to seek out both innovations and relics. It sets up no sharp line between standard language and dialect, and recognizes regional dialects within standard speech. By interviewing in each community two or more informants, differing in age and sophistication, it attempts to record not only the static occurrence of forms but the dynamic direction of linguistic change, not only the survival of relics but the spread of innovations. With a slight bias in favor of items of the rural and small-town culture of pre-automobile days, its questionnaire avoids both minute details of wagon construction and refined technicalities of cooking. There is little reason to prefer men or women of the same background, though admittedly some field workers may have found it easier to work with one group or the other. In New England, the only field workers to interview more women than men were the two women, Rachel Harris and Marguerite Chapallas; in other regions, women field workers have found men more cooperative than women. Since most of the typical local contacts through whom I get in touch with informants—newspaper editors, farm agents, or local officials—have been men, I have probably interviewed more men than women; but I have found little difference in the ease of establishing rapport, in the reluctance to use taboo terms, or in the tendency to prefer the so-called 'standard' term, pronunciation, or grammatical form. For the American Atlas, it probably makes no difference whether the informant is a man or a woman.

The Linguistic Survey of England, directed by Harold Orton and Eugen Dieth, differentiates sharply between the 'dialect' and the standard language; it ignores recent cultural innovations, and concentrates heavily on determining the survival of relics. With a questionnaire concerned more with farm implements and the anatomy of farm animals than with cooking and sewing, it probably will find men informants more satisfactory than women.

The survey of Yiddish dialects now being conducted in New York city by the Yiddish Scientific Institute works largely with women because they are the best informants available. The Eastern European speakers of Yiddish who have survived war and persecution have been cut off from Western investigators by the whims of political doctrine; consequently, it has been necessary to choose as informants elderly Jewish residents of New York city who had come to America as adults. Of this group it was found that women are better informants than men. Through broader social contacts, whether as garment workers or as businessmen, most of the men have lost their distinctively local Yiddish speech forms, while, thanks to a narrower range of contacts, the women have often kept their dialect relatively unchanged.

For some cultures, an investigator might be limited to informants from one sex. Where, as in some Islamic communities, women are not supposed to talk with men who do not belong to their immediate family, a man could normally interview only men, a woman only women. In such

a culture one would really need two parallel investigations.

Elsewhere, as in Japan, convention imposes upon women the use of honorific forms different from those used by men, not only such obvious details as terms of address, but verb inflections as well. Men and women informants may be readily interviewed, but will furnish different data. Native Japanese have derived much innocent amusement from hearing soldiers of the American garrison use speech forms normally used by women. As an extreme example, occasionally an American is heard speaking the archaic and highly formalized trade dialect of the professional geisha. Are those phenomena to be considered as reflecting a difference between the language of men and that of women? Are they simply marks of a highly stratified culture? Or perhaps both?

Finally, we have languages such as Carib and Yana, in which women seem to utilize different grammatical forms from those which men use—allomorphs if not actual morphemes—without social stratification or stylized honorifics.

Manifestly, these phenomena are not all of the same type. An investigator finding differences between the speech of men and women informants in Tokyo should not consider those differences as merely an extreme variety of the differences he had observed between the speech of men and women in Tulsa. These differences must be interpreted against the cultural background, so that the problem is not merely linguistic but ethnolinguistic, metalinguistic, or, if you wish, paralinguistic. The problem of speech differences between men and women is one that will require the cooperation of linguists and cultural anthropologists, and perhaps innovations in method.

Actually, it is on questions of method that this issue of Orbis seems to be least informative. Except for Roques' review of the first volume of the French Atlas (237–44, reprinted from the 1903 volume of the Journal des Débats), the most detailed discussions of method are found in the two American articles, by H. B. Allen and the McDavids, and in De Boeck's account of his work in the Belgian Congo.

In this issue, as too often elsewhere, many writers assume, tacitly or otherwise, that principles of dialect investigation have been immutably laid down for all time by Gilliéron and Edmont: one questionnaire and one field worker for the area, one informant per community. But as we all know, different problems require different methods; the study of dialect variations in intonation, stress-patterns, and junctures would probably require an extensive use of tape recordings, very little impressionistic transcription in the field, and substantially new types of questionnaires, perhaps drawing upon Harris's techniques for discourse analysis. Of equal importance with its service as a clearing house for progress reports, Orbis could serve as a forum for such discussions of method, where scholars might propose new techniques and report on their success with older ones.

In such a forum, Americanists could both teach and learn. The concepts of time-perspective and relative intelligibility might be applied to dialects of the Scandinavian, Dutch-German, or Iberian regions. On the other hand, a modification of the Gilliéron-Edmont inquiry, with impressionistic transcription, might be tried on Eskimo, Navaho, or Ojibwa; before Pearl Harbor there was talk of a linguistic atlas of Ojibwa, but it seems to have been shelved. Moreover, out of such a forum could come a better mutual understanding between the structuralist and the dialect geographer; there is no need to dramatize a fictitious 'conflict' between them, for neither can do the other's job, but there is need to learn which problems each technique can solve, and which need a combination of approaches.

In the meantime, we have Orbis. Pop has worked heroically to make the journal pos-

sible. Only the cooperation of other scholars can make it great.

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THIS WAS PUBLISHING. By Donald Sheehan. Bloomington: Indiana University Press, 1952, Pp. xiv, 288.

At the beginning of this century, it was possible for Ginn and Co. to publish an Eskimo grammar, without any hope of recovering the major part of their investment, and purely as an act of kindness towards the author. Such gestures were rare, even fifty years ago (towards the end of the period described in the book under review, roughly 1865–1914), but they were at least possible, even for a purely commercial publishing firm. This is more than can be said for the present day. Sheehan's interesting and well-documented study makes clear the reasons for the relatively favorable conditions obtaining before 1914: publishing was a leisurely, genteel occupation, virtually a profession (16), with relatively low labor costs and tax burdens, and a not too inadequate marketing system.

The contrast with the present makes it very clear why scholarly productions cannot hope to find publication with commercial firms in our day. Labor costs far more than it did even ten years ago, materials likewise; taxes are heavy; and the distribution system is by now completely inadequate. The point of first returns for a book is nowadays not less than five or ten thousand copies (29). In these circumstances, non-commercial outlets are far better for scholarly work, especially that which justifies only a small edition and requires a subsidy. Normally, the university press best fulfills this need. The author can also act as his own publisher, if he has the time and energy to spare and can obtain working capital. The advantage of the Selbstverlag lies mainly in eliminating the overhead costs, which bulk so large in commercial publishing; but it also provides a non-academic, quasi-avocational activity, with an opportunity for the academician to buttress his ego by modest participation in business life, the dominant concern of our society.

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